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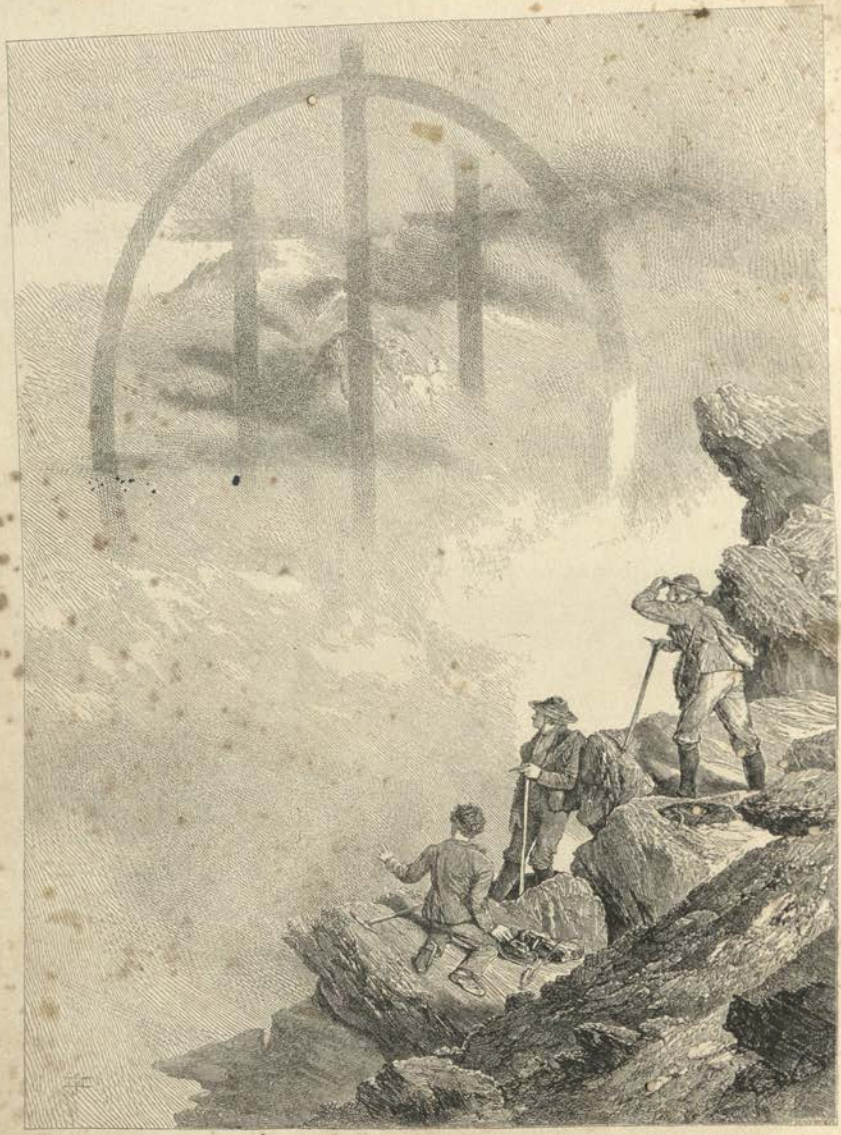

FOG-BOW SEEN FROM THE MATTERHORN ON JULY 14, 1865

"THE TAUGWALDERS THOUGHT THAT IT HAD SOME CONNECTION WITH THE ACCIDENT"

SEE CHAP. XXII.

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' 5678' 98 :' 0' ;<:569' =8><:8' 68 ?7@A' @A6 @B' ><:' ' 6<@A' C<@57D @8@5 6' 5<E:0' ' C8:5 7@' 8F7@8@5' <@B<@' GE=67 ;8:' :8HE8 58B' F8' 5<' F ;8' ><:' ;7F' <F8' I85C;8 ' <>' 5;8' A:8 5' 6G7@8' G8 I $ 5' 5;7 ' 57F8' ' ; B' <@69' ' 6758: :9' CHE 7@5 @C8' J75;' F<E@5 7@88:7@A0' @B' ; B'8?8@' @<5' 88@ K+FEC;'68 ' 85'><<5'EG<@K ' F<E@5 7@$ F<@A 5' 5;8' G8 I ' J;7C;' J8:8' EG<@' F9' = 5' J ' <@5' 86?<EL0' 7@' ' E ' G;7@8$;8' I85C;8 ' 5; 5' J8:8' :8HE7:8B' <>' 75' J8:8' 5<' C868=: 58' 5;8' 5:7EFG;' <>' <F8' @A67 ;F8@' J;<' 7@58@B8B' 5<' F I8' 75 ' C8@5$;89' C F8K 5;89'0 J K =E5' 5;89' B7B' @<5' C<@HE8:$ 9' ' F8:8' C; @C8' '>866'7@' J75;' '?8:9' A:88 =68' :8@C;F @' J;<' C8<FG ;78B' 5;7 ' G :590' @B' J ' G:8 8B' =9' ;7F' 5<' :85E:@' 5<' 5;8' E65$ @' ' J8' B7B' <0' J75;' F9' >:78@B' CB<@ 6BK @B' J8' C<@HE8:8B$;7 ' J ' 5;8' <:7A7@' <>' F9' C: F=68 ' F<@A 5' 5;8' 6G $ .78' C8@5' <>' <@5' 86?<EL' M7@C6EB7@A' 5;8' B7 A:88 =68 N J ' ' ?8:9' B867A;5>E6' C: F=68$;8' F<E@5 7@' 7:' B7B' ' C5' ' @' 8F857C' 0 7;8' I9' B7B' '6<<I' =6 CI0' 7@ 58 B' <>' =6E8' 0 @<:' B7B' '>886' 58FG58B' 5<' 5;:<J' F9 86>' <?8:' G:8C7G7C8 $ ' ; 58@8B' 5<' 8@6 :A8' F9' 8LG8:78@C80' @B' J8@5' 5<' 5;8' 558:;<:@$ ' J ' E:A8B' 5<J :B ' <@5' 86?<EL' =9' 5;< 8' F9 58:7<E ' 7FGE6 8 ' J;7C;' C E 8' F8@' 5<' G88:' 7@5<' 5;8' E@I@<J@$ %<5' <@69' J '5;7 ' F<E@5 7@' :8GE58B' 5<' =8' 5;8' ;7A;8 5' 7@' 4: @C80' @B' <@' 5; 5' CC<E@5' J ' J<:5;9' <>' 558@57<@0' =E5' 75' J ' 5;8' B<F7@ 57@AP' G<7@5' <>' ' F< 5' G7C5E:8 HE8' B7 5:7C5' <>' 5;8' ;7A;8 5' 7@58:8 50' J;7C;0' 5<' 5;7 ' B 90' :8F 7@ ' 6F< 5' E@8LG6<:8B' ;8' 558:;<! @' 55: C58B' F8' 7FG69' =9' 75 ' A: @B8E:$ 5' J ' C<@D 7B8:8B' 5<' =8' 5;8' F< 5' 5;<:<EA;69'7@ CC8 7=68' <>' /' F<E@5 7@ 0' 8?8@' =9' 5;< 8' J;<' <EA;5' 5<' ; ?8' I@<J@' =8558:$ 57FE6 58B' 5<' F I8' >:8 ;' 8L8:57<@ ' =9' <@8' :8GE6 8' >58:' @<5;8:0' ' :85E:@8B0' 98 :

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@' 8@B8 ?<E:7@A' 5<' F I8' 5;8' =<<I' <>' <F8' E 8' 5<' 5;< 8' J;<' F 9' J7 ;' 5<' A<' F<E@5 7@ C: F=67@A0 J;85;8:' 7@' 5;8' 6G ' <:' 86 8D J;8:80 E@BE8' G:<F7@8@C80 G8:; G 0 ; ' =88@' A7?8@' 5<' <E:' F7 5 I8 ' @B' > 76E:8 ' 0 @B' 75' J7 ' B<E=568 ' =8' G<7@58B' <E5' 5; 5' <E:' G: C57C8' FE 5' ; ?8' =88@' = B' 7>' 5;8' G:7@C7G68 ' J;7C;' :86 7B' B<J@' :8' <E@B$:' 5; 5' 5;8' G:7@C7G68 ' FE 5' =8' E@ <E@B' 7>' 5;8' G: C57C8' J ' A<<B$ 5' 7 ' F 7@5 7@8B' 7@' @' 8 :69' C; G58:' 5; 5' 5;8' G< 757?80 <:' E@ ?<7B =680 B @A8:' <>' F<E@5 7@88:7@A' :8' ?8:9' F 660 985' >:<F' E= 8HE8@5' G A8 ' 75' C @' =8' ;<J@' 5; 5' ?8:9' C<@ 7B8: =68' :7 I ' J8:8' @!7@$;8' :8 <@' 7 ' <=?7<E K J8' J8:8' @<5' 7F F CE6 58$ E:' =6E@B8:' ' :8' @<5' ;86B' EG' 5<' =8' BF7:8B0 <:' 5<' =8' 7F75 58B0 =E5' 5<' =8' ?<7B8B$

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BEACHY HEAD.

CHAPTER I.

On the 26d of July 1860, I started for my first tour in the Alps. As we steamed out into the Channel, Beachy Head came into view, and recalled a scramble of many years ago. With the impudence of ignorance, my brother* and I, schoolboys both, had tried to scale that great chalk cliff. Not the head itself—where sea-birds circle, and where the flints are ranged so orderly in parallel lines—but at a place more to the east, where the pinnacle called the Devil's Chimney had fallen down. Since that time we have been often in dangers of different kinds, but never have we more nearly broken our necks than upon that occasion.

In Paris I made two ascents. The first to the seventh floor of

* The author of *Travels in Alaska*.

a house in the Quartier Latin—to an artist friend, who was engaged, at the moment of my entry, in combat with a little Jew. He hurled him with great good-will, and with considerable force, into some of his crockery, and then recommended me to go up the towers of Notre Dame. Half-an-hour later I stood on the parapet of the great west front, by the side of the leering fiend which for centuries has looked down upon the great city. It looked over the Hotel Dieu to a small and commonplace building, around which there was always a moving crowd. To that building I descended. It was filled with chattering women and eager children, who were struggling to get a good sight of three corpses, which were exposed to view. It was the Morgue. I quitted the place disgusted, and overheard two women discussing the spectacle. One of them concluded with "But that it is droll;" the other answered approvingly, "But that it is droll," and the Devil of Notre Dame, looking down upon them,* seemed to say, "Yes, your climax—the cancan, your end—not uncommonly that building; it is droll, but that it is droll."

I passed on to Switzerland; saw the sunlight lingering on the giants of the Oberland; heard the echoes from the cow-horns in the Lanterbrunnen valley and the avalanches rattling off the Jungfrau; and then crossed the Gemmi into the Valais, resting for a time by the beautiful Oeschinen See, and getting a forcible illustration of glacier-motion in a neighbouring valley—the Gasteren Thal. The upper end of this valley is crowned by the Tschingel glacier, which, as it descends, passes over an abrupt cliff that is in the centre of its course. On each side the continuity of the glacier is maintained, but in the centre it is cleft in twain by the cliff. Lower down it is consolidated again. I scrambled on to this lower portion, advanced

* The position of the Morgue has been changed since 1860.

towards the cliff, and then stopped to admire the contrast of the brilliant pinnacles of ice with the blue sky. Without a warning, a huge slice of the glacier broke away, and fell over the cliff on to the lower portion with a thundering crash. Fragments rolled beyond me; although, fortunately, not in my direction. I fled, and did not stop until off the glacier; but before it was quitted learned another lesson in glacial matters: the terminal moraine, which seemed to be a solid mound, broke away underneath me, and showed that it was only a superficial covering resting on a slope of glassy ice.

On the steep path over the Gemmi there were opportunities for observing the manners and customs of the Swiss mule. It is not perhaps in revenge for generations of ill-treatment that the mule grinds one's legs against fences and stone walls, and pretends to stumble in awkward places, particularly when coming round corners and on the brinks of precipices; but their evil habit of walking on the outside edges of paths (even in the most unguarded positions) is one that is distinctly the result of association with man. The transport of wood from the mountains into the valleys occupies most of the mules during a considerable portion of the year; the faggots into which the wood is made up project some distance on each side, and it is said that they walk intuitively to the outside of paths having rocks on the other side to avoid the collisions which would otherwise occur. When they carry tourists they behave in a similar manner; and, no doubt, when the good time for mules arrives, and they no longer

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' ?7 758B' 5;8' = 5; ' <>' 8EI0 @B' J' 5;8' HE88:' 8F=6 A8' <>' F8@0 J<F8@0 @B' C;76B:8@0 557:8B' 7@' = 5;7@A A<J@ 0 C; 557@A0 B:7@I7@A0 @B' G6 97@A' 5' C;8 ' 7@' 5;8' J 58:$;8' C<FG @9' B7B' @<5' 88F' 5<' =8' G8:>8C569' E:8' J;85;8:' 75' J ' B8C<:<E ' 7@' EC;' ' 75E 57<@' @B' 7@' EC;' 557:8' ><:' 86B8:69' F8@' 5<' C; 8' 9<E@A'>8F 68 ' >:<F' <@8' C<:@8:' 5<' @<5;8:0 =E5' 75' J ' E@ @7F<E ' 7@' ;<J67@A' 5 5;8' B?8@5' <>' ' 5: @A8:' J;<' :8F 7@8B' C<?8:8B0 @B' =58: 669' 98668B' J;8@' ' B8G :58B' J75;<E5' 8L;7=757@A' F9' I85C;$

' 5:EBA8B' EG' 5;8' ;<@8' ? 6689' @B' 5E:@8B' 7B8' 5' +7 G' 5<' A<' EG' 5;8' (7 G' ; 70 J;8:8' <@8' J<E6B' 8LG8C5' 5<' 88' A:8 58:' 5: C8 ' <>' A6 C7 6 C57<@0 7>' ' A6 C78:' ><:F8:69' >7668B' 750 ' <@8' 7 ' 7B' 5<' ; ?8' B<@8$P

' J ' =<E@B' ><:' 5;8' ? 6689' <>' 0 @B' F9' J<:I' 5<<I' F8';7A;' EG' 5;8' 6G ' <@' 875;8:' 7B80 > :' =89<@B' 67F75' <>' 5:88 ' @B' 5;8' 5: CI ' <>' 5<E:7 5 $;8' ?78J' >:<F' 5;8' 6<G8 ' <>' 5;8' (78 F78 0 <@05;8' 8 58:@' 7B8' <>' 5;8' ? 6689' ' <:' & ' >885' =<?8' 5;8' 7B66 A8' <>' 0 7 ' G8:; G ' 5;8' >7@8 5' <>' 75 ' I7@B' 7@' 5;8' 6G $;8' >E66' ;87A;5' <>' 5;8' 5;:88 G8 I8B' 7 C; =86' M5;8' ;7A;8 5' F\E@5 7@' 777' J75S8:6 @BM' 7 ' 88@' 5' <@8' A6 @C80 0 ' >885' <>' B8@ 8' ><:8 5 0P' A:88@' 6G 0 G7@@ C68 ' <>' :<CI0 @B' A67558:7@A' A6 C78: $;8' G8 I ' 88F8B' 5<' F8' 5;8@' 5<' =8' ;<G868 690 7@ CC8 7=68' >:<F' 5;7 ' B7:8C57<@$

' B8 C8@B8B' 5;8' ? 6689' 5<' 5;8' ?766 A8' <>' 5 6B8@0 @B' 5;8@' J8@5' EG' 5;8' (7 G' ; 7 5<' V8:F 550 @B' 5<GG8B' 5;8:8' 8?8: 6 B 9 $ EF8:<E' 5: C8 ' <>' 5;8' ><:F7B =68' 8 :5;HE I8 ;<CI ' <>' >7?8' 98 : ' =8><:8' 5766' :8F 7@8B0 G :57CE6 :69' 5' 5$ %7C;<6 0 J;8:8' 5;8' 7@ ' 77 =75 @5 ' ; B' =88@' 58::7>78B' =89<@B' F8 E:8' 5' 560+' B8 5:EC57<@' <>

P' @B' 5<' ; ?8' EGG678B' >:<F' 677A67' 57G' 5;8' H PQ <>' ' Z' 5;8' / 4% - ' K (% ' <>' 5?;7:67' :C ((& "' <' N" - $' H ' 5;8' 776 777 ' <>' J75S8:6 @B$'3 .$ ' $' =<?6L" 0 ' ' ' ' ' G$ Q $

5;87:' C;E:C;8 ' @B' ;<E 8 $ 5' 5;7 ' G6 C8 ' J866 ' 5' (7 G ' 6 :A8' G :5' <>' 5;8' G<L!E6 57<@' J ' <=67A8B' 5<' 67?8' E@B8:' C @? ' ><:' 8?8: 6' F<@5; $ 5'7 ' :8@7 :I ;68' 5; 5'5;8:8' J ' ; :B69' '67>8' 6< 5' <@' 5;7 ' <CC 7<@ 65;<EA;' 5;8:8' J8:8' =<E5' >7>59' ;<CI ' <F8' <>' J;7C;' J8:8' ?8:9' 8?8:8$

5' V8:F 55' ' J @B8:8B' 7@' F @9' B7:8C57<@ ' =E5' 5;8' J8 5;8:' J ' = B ' @B' F9']J<:I' J ' FEC;' :85 :B8B$ @8' B 9 >58:' G8@BD 7@A' '6<@A'57F8' 7@' 558FG5 '5<' I85C;' @8 :'5;8' 6<:@67 @B' 7@' >E5768' 8@B8 ?<E:' 5<' 87S8'5>78' ><:F ' <>'5;8'G8 I ' '5;89' ><:' '>8J' 8C<@B ' G88:8B' <E5' >:<F' =<?8' 5;8' B8@ 8' = @I ' <>' J<<669' C6<EB ' ' B858:D F7@8B' @<5'5<' :85E:@' 5<' V8:F 55' =9'5;8' E E 6' G 5; ' =E5'5<' C:< ' 5;8' &<:@8:' A6 C78:'5<'5;8' 67>>86' ;<586$ >58:' ' : G7B' C: F=68' <?8:' 5;8' G<67 ;8B' :<CI ' @B' @<J=8B ' J;7C;' I7:5' 5;8' = 8' <>'5;8' ;8<BG68' A6 C78: ' @B' J B7@A'5;:<EA;' <F8' <>'5;8' 5:8 F ' J;7C;' >6<J'>:<F'750' 5'5; 5'57F8' FEC;' J<668@' =9'5;8'6 58' : 7@ ' 5;8' >7: 5'B7>>7CE659' J ' ::7?8B' 50' 7@' 5;8' ; G8' <>' ' G:8C7G7C8' =<E5'5;:88' >7E@B:8B' >885' ;7A67$ 5' 88F8B'5; 5'5;8:8' J<E6B' =8' @<' B7>>7CE659' 7@' C:< 7@A' 5;8' A6 C78:' 7>' 5;8' C67>>' C<E6B' =8' B8 C8@B8B0 =E5' ;7A;8:' EG ' @B' 6<J8:' B<J@ ' 5;8' 7C8' GG8 :8B 5<' F9'7@8LG8:78@C8B' 898 ' 5<' =8' 7FG =68' ><:' ' 7@A68' G8: <@$;8' A8@8: 6' C<@5<E:' <>'5;8' C67>>' J ' @8 :69' G8:G87+7CE6 :' =E5' 75' J ' 'A<<B' B8 6' =:<I8@' EG ' @B' 5;8:8' J '675568' B7>>7CE659' 7@' B8 C8@B7@A' =9'S7AS AA7@A' >:<F' <@8' F ' 5<' @<5;8:$ 5'68@A5;' I;8:8 J ' '6<@A' 6 =' @8 :69' F<<5;' >7L8B' 5' @' @A68' <>' =<E5' ><:59' B8A:88 ' =85J88@' 5J<' J 66 7B8B'G78C8 ' <>':<CI' @<5;7@A' 8LC8G5'5;8' A6 C78:' C<E6B' =8' 88@' =86<J$ 5' J ' @' J I J :B' G6 C8' 67@5' !87@A' B<E=5>E6'7>' :85E:@' J8:8' G< 7=68' ' ' ; B' =88@' B:<GG7@A' >:<F' <@8' 68BA8' 5<' @<5;8:' G 8B' 75' 5' 68@A5;' =9' 697@A' C:< ' 5;8' 6 =' E557@A' 5;8' ;<E6B8:' 57>>69' A 7@ 5' <@8' 7B8' @B' 5;8' >885' A 7@ 5' 5;8' <5;8:' @B' A: BE 669' J:7AA67@A' B<J@' =9' >7: 5' F<?7@A' 5;8' 68A ' @B' 5;8@' 5;8' = CI$);8@' 5;8' =<55<F' <>' 5;8' 6 =' J ' A 7@8B' ' >:78@B69' C: CI' J ' 88@' 7@5<' J;7C;' 5;8' G<7@5' <>' 5;8' = 5<@' C<E6B' =8' 5ECI ' @B' ' B:<GG8B' B<J@' 5<' 5;8' @8L5' G78C8$ 5' 5<<I' '6<@A'57F8' C<F7@A' B<J@' 5; 5'675568' =75' <>' C67>>' @B' ><:' ' >8J' 8C<@B ' 75' J ' 57 > C5<:9' 5<' 88' 567<' 7C8' C6< 8' 5' ; @B$ @' @<5;8:

F<F8@5' 8C<@B' B7>>7CE659' G:8 8@58B' 75 86>$;8' A6 C78:' J8G5' :<E@B' @' @A68' <>' 5;8' C67>>0' @B' ' 5;8' 7C8' J ' @<5' <>' 5;8' @ 5E:8' <>' 5:8 C68' <:' 5;7@' GE559 0' 75' I8G5' J 9' >:<F' 5;8' 675568' ; 90' <@' 5;8' 8BA8' <>' J;7C;' ' 5<<B$) 8' J8:8' @<5' J7B869' 8G : 58B0';E5'5;8'8BA8' <>' 5;8' 7C8' J ';7A;8:'5; @'5;8'<GG< 758'8BA8' <>':<C I 0 @B' J<: 80' 5;8' :<C I' J ' <?8:8B' J75;'6<< 8' 8 :5;' @B' 5<@8 ' J;7C;' ; B' > 668@' >:<F' ;<?8$ $ 66' 6<@A'5;8' 7B8' <>'5;8' C67>>0' '> :' 'C<7BB';8' 88@'7@';<5;' B7:8C57<@ 0' 5;8' 7C8' B7B' @<5' 5<EC;' 750' ;E5' 5;8:8' J ' 5;7 ' F :A7@ 6' C:8? 80' 8?8@' >885' J7B80' @B' <>' E@I@<J@' B8!N5;$

66' 5;7 ' J ' 88@' 5' ' A6 @C80' @B' 6F< 5' 5' <@C8' ' C<@C6EB8B' 5; 5' ' C<E6B' @<5'!E F G'5;8' C:8? 80' @B' =8A @' 5<' 5:9' 6<@A' 5;8' C67>>' 6<J8:' B<J@0';E5' J75;<E5' ECC8 0' ><:$5;8'7C8':< 8';7A;8:' @B';7A;8:0' 7F 576' 5' 6 5' >E:5;8:' G:<A:8 ' J ' 5<GG8B';9' 5;8' C67>>' ';8C<F7@A' G8:>8C569' F<<5;$) 75;' @' L8' 75' J<E6B';?8';88@'G< 7=68' 5<' CE5' EG' 5;8' 7B8' <>' 5;8'7C80 J75;<E5'<@8' ' J' 5;8:8' J ' @<' 658:@ 57?8' ;E5'5<' :85E:@' @B'> C8' 5;8'!E F G$

5' J ' A8557@A'5<J :B ' 8?8@7@A0' @B' 5;8' <68F@' 5766@8 ' <>' 5;8' 7A;' 6G ' J ' =:<I8@' <@69' =9' 5;8' <E@B' <>' :E ;7@A' J 58:' <:' <>' > 667@A':<CI $ >'5;8'!E F G' ;<E6B';8' ECC8 >E60 K J 866 0' 7>' @<50' '>866' 7@5<' 5; 5' ;<::7=68' C; F0' 5<' ;8' >:<S8@' 7@0' <:' B:<J@8B' 7@' 5; 5' AE:AD 67@A0' :E ;7@A' J 58:' $?8:95;7@A'B8G8@B8B' <@' 5; 5' !E F G$

I8B' F9 86>0' Z @'75';8'B<@8^3 5' 25' ;8$ <0'>7@B7@A'F9' 57CI' J ' E 868 0' ' 5;:8J' 75' @B' 5;8' I85C; =<<I' 5<' 5;8' 7C80' @B' >7U5' :85:8 5D 7@A' ' > :' 'G< 7=680': @' ><:J :B' J75;' 66' F9' F7A;50'5<<I' 5;8' 68 G0P' = :869':8 C;8B' 5;8' <5;8:' 7B80' @B' >866' J I J :B69' <@' F9' I@88 $P' $B/F< 5' 5' 5;8' >7F8' F<F8@5' ' ;<J8:' <>' 5<@8 ' >866' <@' 5;8' G<5' >:<F' J;7C;' ' ; B' !E F G8B$

' ;8' A6 C78:' J ' C:< 8B' J75;<E5' >E:5;8:' 5:<E=680';E5' 5;8' 7>>8605

P' ;7 ' J<E6B' <>'C<E: 8' ; ?8$=88@'@<5;7@A'5<' 'G: C57 8B' A9F@ 5'7@' ':<<F$;8' B7>>7CE659' 6 9' C;78>69'7@' !E F G7@A' >:<F' = B' ><57@A' <@' 5<' J<: 8$;8' 7@C7B8@5' J<E6B' @<5' ; ?8' <CCE::8B'7>'5;8' C67>> ' ; B' =88@' B8 C8@B8B' '675568' F<:8'5<+5;8'8 5$

_' ;8' 7>>86';<586'M5;8' 5 :57@A G<7@5'><:'5;8' C8@5'<>' <@58' G N0' 'B8 8:?8B69' G<GE6 :'7@@0'=86<@A7@A'5<' <@ 78E:' 8768:0'5;8'G7R<G:785<:'<>'5;8';<586 ' 5'V8:F 550' 7' 75E 58' 5' ' ;87A;5'<>' '>885' =<?8'5; 5'?766 A8'M 2 ' =<?8'5;8' 8 N0' @B'C<F F @B' ' EG8:=' G @<: F7C'?78J$

which was then a very small building, was crammed with tourists, and could not take me in. As the way down was unknown to me, some of the people obligingly suggested getting a man at the chalets, otherwise the path would be certainly lost in the forest. On arriving at the chalets no man could be found, and the lights of Zermatt, shining through the trees, seemed to say, "Never mind a guide, but come along down; I'll show you the way;" so off I went through the forest, going straight towards them. The path was lost in a moment, and was never recovered; I was tripped up by pine-roots, tumbled over rhododendron bushes, fell over rocks. The night was pitch dark, and after a time the lights of Zermatt became obscure, or went out altogether. By a series of slides, or falls, or evolutions more or less disagreeable, the descent through the forest was at length accomplished; but torrents of formidable character had still to be passed before one could arrive at Zermatt. I felt my way about for hours, almost hopelessly; by an exhaustive process at last discovering a bridge, and about midnight, covered with dirt and scratches, re-entered the inn which I had quitted in the morning.

Others besides tourists got into difficulties. A day or two afterwards, when on the way to my old station, near the Hornli, I met a stout curé who had essayed to cross the Theodule pass. His strength or his wind had failed, and he was being carried down, a helpless bundle and a ridiculous spectacle, on the back of a lanky guide, while the peasants stood by with folded hands, their reverence for the church almost overcome by their sense of the ludicrous.

I descended the valley, diverging from the path at Randa to mount the slopes of the Dom,* in order to see the Weisshorn face to face. The latter mountain is the noblest in Switzerland, and

* The highest of the Mischabelhorner.

from this direction it looks especially magnificent. On its north there is a large snowy plateau that feeds the glacier of which a portion is seen from Randa, and which on more than one occasion has destroyed that village. From the direction of the Dom—that is, immediately opposite, this Bies glacier* seems to descend nearly vertically; it does not do so, although it is very steep. Its size is much less than formerly, and the lower portion, now divided into three tails, clings in a strange, weird-like manner to the cliffs, to which it seems scarcely possible that it can remain attached.

Unwillingly I parted from the sight of this glorious mountain, and went down to Visp. A party of English tourists had passed up the valley a short time before with a mule. The party numbered nine—eight young women and a governess. The mule carried their luggage, and was ridden by each in turn. The peasants—themselves not unaccustomed to overload their beasts—were struck with astonishment at the unwonted sight, and made comments, more free than welcome to English ears, on the nonchalance with which young miss sat, calm and collected, on the miserable beast, while it was struggling under her weight, combined with that of the luggage. The story was often repeated; and it tends to sustain some of the hard things which have been

* Ball's *Alpine Guide* speaks of this incorrectly as the small Bies glacier. It is about half-a-mile wide.

said of late about young ladies from the ages of twelve or fourteen to eighteen.

Arriving once more in the Rhone Valley, I proceeded to Viesch, and from thence ascended the Eggischorn; on which unpleasant eminence I lost my way in a fog, and my temper shortly afterwards. Then, after crossing the Grimsel in a severe thunderstorm, passed on to Brienz, Interlachen, and Bern; and thence to Fribourg and Morat, Neuchâtel, Martigny, and the St. Bernard. The massive walls of the convent were a welcome sight as I waded through the snow-beds near the summit of the pass,

and pleasant also was the courteous salutation of the brother who bade me enter. He wondered at the weight of my knapsack, and I at the hardness of their bread. The saying that the monks make the toast in the winter that they give to tourists in the following season is not founded on truth; the winter is their most busy time of the year. But it *is* true they have exercised so much hospitality, that at times they have not possessed the means to furnish the fuel for heating their chapel in the winter.*

Instead of descending to Aosta, I turned aside into the Val Pelline, in order to obtain views of the Dent d'Erin. The night had come on before Biona was gained, and I had to knock long and loud upon the door of the curé's house before it was opened. An old woman, with querulous voice, and with a large goître, answered the summons, and demanded rather sharply what was wanted; but became pacific—almost good-natured—when a five-franc piece was held in her face, and she heard that lodging and supper were requested in exchange.

* The temperature at the St. Bernard in the winter is frequently 40° Fahr. below freezing point. January is their coldest month. See Dollfus-Ausset's *Matériaux pour l'étude des Glaciers*, vols. vi. and vii.

9' B7:8C57<@ ' 8:58B' 5; 5' 'G A8' 8L7 58B' >:<F' :8: 98@0' 5' 5;8' ;8 B' <>' 5;7 ' ? 6689 0' 5<' :8E760P' 7@' 5;8' (6' <E:@ @C;80' @B' 5;8' <6B' J<F @0' @<J' C<@?7@C8B' <>' F9' :8 G8C5 =76759 0' =@ 78B' ;8: 86>' 5<' >7@B' ' AE7B8$:8 8@569' ;8' 7@5:<BEC8B' ' @ 57?80' G7C5E:8 HE869' 557:8B' 7@' ;7A; G8 I8B' ; 50' =: 7B8B' ! CI850' C :6850' J 7 5C< 50' @B' 7@B7A<'%G @5 6<<@ 0' J;<' A:88B' 5<' 5 I8' F8' 5<' 5;8' ?E66 A8' <>' (6' <E:@ @C;8$ Y)8 85' <>>8 :69' <@' 5;8' @8L5' F<:@7@A0' @B' A<5' 5<' 5;8' EF F75' <>' 5;8' G ' J75;<E5' B7>>7CE659$ 5' A ?8' F8' F9' >7: 5' 8LG8:7D 8@C8' <>' C<@ 7B8: =68' 6<G8 ' <>' ; :B' 588G' @<J0' @B0' 67I8' 66' =8A7@D @8: 0' ' 8@B8 ?<E:8B' 5<' G:<G' F9 86>' EG' J75;' F9' 57C I0' @B' I8G5' 75' 2 ' 7@ 58 B' <>' ;<6B7@A' 75' =85J88@' F9 86>' @B' 5;8' 6<G80' @B' 68 @7@A' EG<@' 750' ' ;<E6B' ; ?8' ;88@' B<@8$;8' F @' 8@;A;58@8B' F8'0 ;E5';8'; B0' G:<G8:690' '?8:9' F 66' <G7@7<@' <>';7 ' 8FG6<98:0' @B' 75' 7 ' G:<= =69' <@' 5; 5' CC<E@5' 5; 50' '>8J' F7@E58 ' >58:' J8' ; B' G 8B' 5;8' EF F750' ;8' 7B' ;8' J<E6B' @<5' A<' @9' >E:5;8:' @B' J<E6B' :85E:@' 5<' 7<@ $ 66' :AEF8@5' J 'E 868 0 ;8' 5<<B' 5766' @B' 5<' 8?8:95;7@A' 5; 5' J ' 7B' @ J8:8B' @<5;7@A' =E5' 5; 5' ;8' J<E6B' A<' = CI$ 87@A' : 5;8:' @8:?<E ' =<E5' 'B8 C8@B7@A' <F8' 6<@A' @<J ' 6<G8 0' J;7C;' 5766' 7@58:?8@8B' =85J88@' E ' @B' 5;8' ;8 B' <>' 5;8' ? 6D 689 0' ' <>>8:8B' F<:8' G 90' @B' ;8' J8@5' <@' ' ;5568' J 9$:8 8@569' 5;8:8' J8:8' <F8' C67>>' B<J@' J;7C;' J8' ; B' 5<' C: F=68$ 8 C 668B' 5<' F8' 5<' 5<G0' 5;8@' ;<E58B0' 5; 5' ;8' J FE6B' A<' = CI0' @B' =8CI<@8B' 5<' F8' 5<' C<F8' EG$ @' 5;8' C<@5: :90' ' J 758B' ><:' ;77>7' 5<' C<F8' B<J@0 =E5' 7@ 58 B' <>' B<7@A' <0' 7@' ' 8C<@B' <:' 5J<' ;8' 5E:@8B' :<E@B0' C6 F=8:8B' B8;=8: 5869' EG' 5;8' C67>>0' @B' ? @7 ;8B$ ' EGG< 8B' 75' J ' <@69' ' :E 8' 5<' 8L5<:5' <>>8: ' <>' F<:8' F<@890' @B' J 758B' ><:' ; 6> ' @ ;<E:0' =E5';8' B7B' @<5' !NG8 :' A 7@$;7 ' J ' : 5;8:' 8F= :: 7@A0' ><:';8' C ::78B' <>>' F9' I@ G CI$;8' C;<7C8' <>' C57<@' 6 9' =85J88@' C; 7@A';7F' @B' A<7@A' <@' 5<' :8E760' :7 I7@A' 5;8' 6< ' <>' F9' I@ GD CI$ ' C;< 8' 5;8' 6 558:' C<E: 80' @B' A<5' 5<' :8E760' 5;8' F8' 8?8@D 7@A$;8' 6 @B6<:B' <>' 5;8' 7@@0' E G7C7<E ' <>' ' G8: <@' 8@57:869' 7@@<C8@5' <>' 6EAA A80' J ' B<E=5>E6' 7>' ;8' C<E6B' BF75' F80' @B' 8?8@5 669' 5;:E 5' F8' 7@5<' ' I7@B' <>' 6<>50' J;7C;' J ' 6:8 B9' <8 '

P' ;8:8' J '@<5' 'G '=85J88@' :8: 98@' @B' :8@76$ 88' @<58' 5<' C; G$?7$

CEG785 =9 AE7B8 ' @B =9 ; 9$ @ 6 58:' 98 : ' J8 =8C F8 A<<B >:78@B @B =8 B7B @<5 ; 8 75 58 5< A7?8 C:8B75 @B 8?8@ 5< B? @C8 C<@ 7B8: =68 EF $

9 I85C;8 ' >:<F :8E76 J8:8 F B8 E@B8:' B7>>7CE6578 F9 F 58:7 6 ' ; B =88@ C ::78B <>>K @<5;7@A =8558:' 5; @ >7@8 EA :' G G8:' C<:BB =8 <=5 7@8B @B 5;8 G8@C76 ' 88F8B 5< C<@5 7@ F<:8 767C ' 5; @ G6EF= A<$ <J8?8:0 5;89 9 ' F B80 @B 5;8 G P J ' A 7@ C:< 8B0 5;7 ' 57F8 6<@8$ 9 5;8 ><66<J7@A 8?8@7@A 5;8 <6B J<F @ <> 7<@ ' A 7@ G:<BEC8B 5;8 > 75;68 ' AE7B80 6678 I@ G CI' J ' :8C<?8:8B >58:' 5;8 6 G 8 <> 8?8: 6 ;<E: @B 5;8@ ' G<E:8B ><:5;' 66 5;8 58:F ' <> =E 8 @B :8G:< C;' <> J;7C;' ' J ' F 58:$;8 F @ F768B J;8@ C 668B ' 67 :0 @B ;:EAA8B ;7 ' ;<E6B8: ' J;8@ :8>8::8B 5< ' ' 5;78>0 =E5 B:8J ;7 ' I@7>8 J;8@ G<I8@ <> ' ' G7A$

;8 ><66<J7@A @7A;5 J ' G8@5 5 <:F 98E:0 @B 5;8 B 9 >58:' ' C:< 8B 5;8 <6 48::8L 5< : 78:8 @B <@ 5;8 @8L5 5;8 858 4 <7:' 5< ; F<E@7L$;8 FG8:<:' G<68<@ ::7?8B 5;8 F8 B 90 @B CC8 ' 5< 5;8 8:' B8 &6 C8 J ' :8>E 8B 5< 5<E:7 5 ' 0 =E50 =9 C: F=;@A 6<@A 5;8 6 @ B8 ' 7AE7668 0 ' F @ A8B 5< E5J75 5;8 AE :B @B 5< ::7?8 5 5;8 <@5 @?8:5 ' 5;8 FG8:7 6 G :59 J ' CA7?7@A [5;8 F8 >58:@<<@ > 767@A 5< A85 5< 5;8 . :B7@0 =E5 ?8:9 7@" :69 ECC88B7@A 7@ =:8 I7@A ' 68A =9 B7$ 6<BA7@A A:8 5 :<CI ' <@ 5;8 F<5 7@8 <> 5;8 A6 C78:$

P 4:<F ; F<E@7L ' J8@5 5< &8@8? 0 @B 5;8@C8 =9 57:8 <@5 8@7 ' 5< E:7@ @B 5< 5678 (EB<7 ' ? 6689 $ ' 6<@A @B J8 :9 B 9 ; B 8@B8B J;8@ 8 E ' J ' :8 C;8B$;8 7@@ J ' >E660 @B ' J ' 57:8B0 @B =<E5 5< A< 5< =8B0 J;8@ <F8 ?766 A8 5: AA68: ' 8@58:8B @B =8A @ 5< 7@A$;89 @A 5< & :7= 6B7' 678 58@<7"0 ' : AAC"B >866<J0 J;< 8 C6<5;8 ' J8:8 @<5 J<:5;' ' ;7667@A0 5<<I 5;8 6< B J75;' J<@BM :>E6 8LG:8 7<@ @B >8867@A$;8 <5;8: ' I8G5 5;87:

"" ;7 ' G ' 7 ' 7 667"B E E 669 5;8 (' <:E5:8$ 5 7 ' 6 < I@<J@ ' 5;8 &: ' <:E8:8 0 J;7C;' 7 0 ' ;C677 ?80 G 5<7 ' ><:' &: @B <:@78:$ 5 7 ' F8@57<@8B 7@ 5;8 >7: 5 ?<6EF8 <> 5;8 $ 8C<@B 8:78 ' <> ' :' ' ' @B 7@ C; G58: ' 7L @B 5J8@59 <> 5;7 ' ?<6EF8 $

places, and sang in admirable time. For hours I sat enchanted; and, long after I retired, the sound of their melody could be heard, relieved at times by the treble of the girl who belonged to the inn.

GARIBALDI!

The next morning I passed the little lakes, which are the sources of the Po, on my way into France. The weather was stormy, and misinterpreting the patois of some natives—who in reality pointed out the right way—I missed the track, and found myself under the cliffs of Monte Viso. A gap that was occasionally seen, in the ridge connecting it with the mountains to the east, tempted me up; and, after a battle with a snow-slope of excessive steepness, I reached the summit. The scene was extraordinary, and, in my experience, unique. To the north there was not a particle of mist, and the violent wind coming from that direction blew one back staggering. But on the side of Italy, the valleys were completely filled with dense masses of cloud to a certain level; and there—where they felt the influence of the wind—they were cut off as level as the top of a table, the ridges appearing above them.

I raced down to Abries, and went on through the gorge of the Guil to Mont Dauphin. The next day found me at La Bessée, at the junction of the Val Louise with the Valley of the Durance, in full view of Mont Pelvoux; and by chance I walked into a

6# * ! ' ' 4 ' ('% ' (* " <

C = :85 J ;8:8 ' 4:8@C ; F @ J ' =:8 I> 57@A J ;< ' >8J' B 9 '
=8><:8 ; B F B8 @ E@ ECC8 >E6 558FG5 5< C8@B 5 ; 5 F<E@5 7@
J75 ;'5 ; :88 @A67 ; F8@ @B 5 ;8 AE7B8 7C ;86 :<S <> ; F<E@7L 0P
' :7A ;5 A<<B >866<J =9 @ F8 .8 @ 89@ EB$

;8 F8 @7A ;5 ' 68G5 5 :7 @ <@ 7@58@B7@A 5< 5 I8 5 ;8
C<E:78:' <@ 5 ;8 ><66<J 7@A B 9 5< &:8@<=68 =E5 66 G6 C8 ' ; B =88@
8CE:8B 8?8: 6 B 9 ' =8><:8 ; @B < ' 85 <E5 5 5J< $ $ <@ 5 ;8
@8L5 B 9 ><:' ' 8?8@59 F768 J 6I$;8 J8 5 ;8:' J ' A 7@ = B
@B <@ 5 ;8 EF F75 <> 5 ;8 <6 B8 E5 :85 ' J ' ><:C8B 5< 88I'
;8658:' 7@ 5 ;8 J :85C ;8B 675568 ;< G7C8$ 5 J ' >7668B JB5;' J<: ID
F8@ J ;< J8:8 8FG6<98B <@ 5 ;8 :< B @B J75 ;' @<L7<E ' ? G<E: '
J ;7C ;' G:<C88B8B >:<F 5 ;8F$;8 7@C68F8@C9 <> 5 ;8 J8 5 ;8:' J '
G:8>8: =68 5< 5 ;8 7@ ;< G75 6759 <> 5 ;8 7@58:7<:$ E5 7B8 75 J '
B7 A:88 =68 =E5 A: @B 7@ 7B8 75 J ' B7 A:88 =68 @B F8 G$7"
;8 J 6I' J ' C<@57@E8B E@B8:' ' B86EA8 <> : 7@ @B ' >865 5 ;8
J 9 B<J@K < 7@58@ 8 J ' 5 ;8 B :I@8 K 5< 5 ;8 ?766 A8 <> '
&: ?8 J ;8:8 5 ;8 G8<G68 <> 5 ;8 7@@ B85 7@8B F8 ><:C7=69$ 5 J '
G8: ; G ' ><:5E@ 58 5 ; 5 5 ;89 B7B < ><:BE:7@A 5 ; 5 @7A ;5 =6<CI '
<> :<CI' >866 5 8?8: 6 G6 C8 ' >:<F 5 ;8 C676> ' <@ 5< 5 ;8 :< B J75 ;'
EC ;' ><:C8 5 ; 5 5 ;89 F B8 6 :A8 ;<68 ' 7@ 5 ;8 F C B F J";7C ;'
6<<I8BP ' 7> 5 ;8:8 ; B =88@ 8LG6< 7<@ ' <> AE@G<JB8:$ ' :8 EF8B
5 ;8 J 6I' 5 ; 6> G 5 >7?8 5 ;8 @8L5 F<:@7@A @B !N C88B8B E@B8:'
58 B9 : 7 5 ;:<EA ;' <E:A BR b+ @ ' 5< &:8@<=68 ::7?7@A 5 5 ;8
6 558:' G6 C8 <<@ >58:' 8?8@ " ' ; ?7@A CC<FG67 ;8B 5 ;8 8@57:8
B7 5 @C8 >:<F :7 @A<@7@ =<E5 87A ;588@ ;<E: ' <> C5E 6 J 6I7@A$
;7 ' J ' 5 ;8 8@B <> 5 ;8 6G7@8 G<:57<@ <> F 9 5<E:' <> 5 <@
J ;7C ;' ' J ' 7@5:<BEC8B 5< 5 ;8 A:8 5 G8 I @B CHE7:8B 5 ;8 G 7<@
><:' F<E@5 7@ C: F=67@A 5 ;8 B8?86<GF8@5 <> J ;7C ;' 7 ' B8 C:7=8B 7@
5 ;8 ><66<J7@A C ; G58: $

P 5 J '5< 766E 5: 58 5677 ' C8@5 5 ; 5 ' ; B =88@ 8G5 5< 5 ;8 (6 <E7 8
5 ' 7@C8 5 ; 5 57?>58 ' B8C8@5 ;<E 8 ; ' =88@ =E765 <@ 5 ;8 EF F75 <> 5 ;7 ' G $;8
<6B ? E658B ;< G7C8 J ' 8:8C58B ><:' 5 ;8 =8@8>75 <> 5 ;8 G76A:7F ' J ;< ><:F8:69 C:< 8B
5 ;8 G ' ' 2 '><:' <F8$K .< @@8R ') ' 2 '% 2

BRIANÇON.

CHAPTER II.

THE ASCENT OF MONT PELVOUX.

"Thus fortune on our first endeavour smiles."

VIRGIL.

THE district of which Mont Pelvoux and the neighbouring summits are the culminating points,* is, both historically and topographically, one of the most interesting in the Alps. As the nursery and the home of the Vaudois, it has claims to permanent attention; the names of Waldo and of Neff will be remembered when men

* See the map in chap. ix., and the general map.

F<:8 > F<E ' 7@ 5;87:' 57F8 J766 =8 ><:A<558@0 @B 5;8 F8F<:9 <> 5;8 ;8:<7C C<E: A8 @B 5;8 7FG68 G7859 <> 5;87:' B7 C7G68 ' J766 8@BE:8 '6<@A ';7 5<:9 6 5 $

;7 ' B7 5:7C5 C<@5 7@ ' 5;8 ;7A;8 5 EF F75 ' 7@ 4: @C80 @B <F8 <> 75 ' >7@8 5 C8@8:9$ 5 ; ' @<5 G8:; G ' 5;8 =8 E578 ' <> J75S8:D 6 @B0 =E5 ; ' C; :F ' <> 75 ' <J@0 75 ' C67>> 0 75 ' 5<::8@5 0 @B 75 ' A<:A8 ' :8 E@ E:G 8B0 75 ' B88G @B ? A8? 6689 'G:8 8@5 G7C5E:8 ' <> A7" 77B8E:0 @B 8?8@ E=67F759 0 @B 75 7 ' 8C<@B 5< @<@8 7@ 5;8 =<6B@8 ' <> 75 ' F<E@5 7@ ><:F $

;8 B7 5:7C5 7@C6EB8 ' ' F ' <> ? 6689 ' J;7C;' ?78 J75;' 8 C;' <5;8:' 7@ 7@AE6 :759 <> C; :C58:' @B B7 7F76 :759 <> C67F 58$ <F8 5;8 : 9 ' <> 5;8 E@ C @ @8?8:' :8 C;0 5;89 :8 < B88G @B @ ::<J$P @ <5;8: ' 5;8 ?8:9 @57G<B8 ' F 9 =8 ><E@B0 5;8 58FG8: 5E:8 F<:8 67I8 5; 5 <> 5;8 G6 7@ ' <> 5 69 5; @ <> 6G7@8 4: @C8$ 677 ' A:8 5 : @A8 <> C67F 58 ; ' ' F :I8B 8>>8C5 <@ 5;8 >6<: ' <> 5;8 8 ? 6689 [58:76759 :87A@ ' 7@ <F80 5<@8 ' 5 I8 5;8 G6 C8 <> 5:88 ' 0 B8=:7 ' @B FEB :8G6 C8 G6 @5 ' @B >6<J8: 0 7@ <5;8: 0 7@ 5;8 G C8 <> ' >8J F768 0 <@8 G 8 ' ?7@8 0 GG68 0 G8 :0 @B C;8::9 5:88 0 5;8 =7:C;0 6B8:0 J 6@E50 ;0 6 :C;0 @B G7@80 658:@ 57@A J75;' >786B ' <> :980 = :6890 < 5 0 =8 @ 0 @B G<5 5<8 $

; '? 6689 ' :8 ><:' 5;8 F< 5 G :5 ;<:5 @B 8:: 57C$;89 :8 @<50 GG :8@5690 :: @A8B <@ @9 B8>7@758 G6 @0 5;89 :8 @<5 B7 G< 8B0 ' 7 ' >:8:G>8@569 5;8 C 8 86 8J;8:80 875;8:' 5 :7A;5 @A68 ' 5<0 <:' G : 6680 J75;0 5;8 ;7A;8 5 EF F75 0 ;E5 5;89 J @B8:' ;75;8:' @B 5;75;8:0 5 I7@A <@8 B7:8C57<@ ><:' '>8J' F768 0 5;8@ B<E=67@A = CI0 @B 5;8@ G8:; G ' :8 EF7@A 5;87:' <:7A7@ 6 C<E: 8$;E 0 6<@A G8:D G8C57?8 ' :8 : :869 5< =8 88@0 @B 75 7 ' B7>>7CE65 5< ><:F ' A8@8: 6 7B8 ' <> 5;8 B7 G< 757<@ <> 5;8 G8 I $

;8 ;7A;8 5 EF F75 ' :8 :: @A8B 6F< 5 7@ ';<: 8 ;<8 ><:F$;8 ;7A;8 5 <> 660 J;7C;' <CCEG78 ' ' C8@5: 6 G< 757<@0 7 ' 5;8 <7@58

P ;8 B8G5;' <> 5;8 ? 6689 '7 ' < A:8 5 5; 5 5;8 E@ @<5 <@69 7 ' @<5 88@ ><:' F<:8 5677F ' >8J ';<E: 'G8:' B 9 BE:7@A 5;8 A:8 58 5 G<:57<@ <> 5;8 98 :0 =E5 7@ <F8 G6 C8 ' K 5 (766 :B BR :8@8 @B 5 @B:78EL ><:' 8L FG68 K75 7 ' @<5 88@ 5 66 ><:' <@8 F@B:8B B 9 $K B<E88558R ' 4 2 = ' G$ $

B8 ' C:7@ ' 0 5;8' 8C<@B' 7@' ;87A;50 5;8' 87!80P' 7 ' <@' 5;8' @<:5;' 0 @B' 5;8' <@5' 86?<EL0 J;7C;' A7?8 ' 75 ' @ F8' 5<' 5;8' 8@57:8' =6<CI0 5 @B ' 6F< 5' B85 C;8B' =9' 75 86>' <@' 5;8' =E5 7B8$

;8' B7 5:7C5' 7 ' 5766' ?8:9' 7FG8:>8C569' I@<J@' 0 5;8:8' :8' G:<= =69' F @9' ? 6689 0 @B' 5;8:8' :8' C8:5 7@69' F @9' EFF75 ' J;7C;' ; ?8' @8?8:' =88@' 5:<BB8@' =9' 5;8' >885' <>' 5<E:7 5 ' <:' 5: ?8668: ' 0 =E5' 7@' ' 75' J ' 8?8@' 68 ' I@<J@$ /@576' HE758' :8C8@569' 5;8:8' J 0 G: C57D C 669 0 @<' F G' <>' 750>' &:8@8: 6 <E:C85R 0 J;7C;' J ' 5;8' =8 5' 5; 5' J ' GE=67 ;8B0 J ' C<FG685869' J:<@A' 7@' 75 ' B867@8 57<@' <>' 5;8' F<E@5 7@ 0 @B' J ' >:8HE8@569' 7@C<::8C5' 7@' :8A :B' 5<' G 5; ' <:' :< B $

;8' F<E@5 7@<E ' :8A7<@ ' <>' ' EG;7@8 0 F<:8<?8:0 :8' @<5' EGD G678B0 67I8' J75S8:6 @B0 5;8' 97 <60 <:' 8?8@' 5;8' 5 67 @' ? 6689 0 J75;' CC<FF<B 57<@' ><:' 5: ?8668: $;8' 7@@ 0 J;8@' 5;89' 8L7 50 :8' >765;9' 5<' @' 7@B8 C:7= =68' 8L58@50 :8 5' 7 ' 86B<F' <=5 7@8B' 7@' 5;87:' =8B$ 0 N5 B8C8@5' ><<B' ><E@B' 7@' 5;87:' I75C;8@ 0 @B' AE7B8 ' 5;8:8' :8' @<@8$;8' 5<E:7 5' 7 ' 5;:<J@' ?8:9' FEC;' <@' ;7 ' <J@' :8 <E:C8 0 @B' 75' 7 ' @<5 5;8:8><:8' E:G:7 7@A' 5; 5' 5;8 8' B7 5:7C5 ' :8' 68 ' ?7 758B' @B' 68 ' I@<J@' 5; @' 5;8' :8 5' <>' 5;8' 6G $

< 5' <>' 5;8' 5 58F8@5 ' CE::8@5' 7@' ' :8 G8C57@A' 5;8 8' F<E@D 5 7@ ' ; B' =88@' B8:7?8B' >:<F' 5J<' E5;<:' . K $ 678' B8' 8 EF<@5

P' <F857F8 ' C 668B' 5;8' 7AE7668' BE' 7B7' B8'6 ' &: ?80' <:' 5;8' 7AE7668' B8' $ 876!C$ 5' ;8' F G' <>' 5;8' ' EG;7@8' 6G ' 5<' 66R' ! "#' $% $ # $&#' #()' *' ' @B' 5<' .< @@8R' $+ (#' "!' , !*)#' M=<5;' 8@A: ?8B' >:<F' 5;8' E@GE=67 ;8C6' ;885' <>' 5;8' F G' <>' 4: @C8N' FE 5' =8' 8LC8G58B$;8 8' F G ' :80' ;<J8?8:0 <@' 5<<' F 66' ' < 6 ' ><:' 5: ?8667@A' GE:G< 8$ $

.' Z' 4 75 ' G<E:' 8:?7:' I' 7 5<7:8' B8 ' <@5 AE8 ' B8' R 7 E 03' =9' 678' B8' 8 EF<@50 7@' 5;8') !$# ' "#')#'

%)% -')"' $' . #('/' 0% %+#"' 1-' 2.!(' %)')' $ # 3 ' *' ' %0' . *)#' 9' .$ ' $ 4<:=8 $

;8' ><66<J7@A' J<:I ' 6 <' 5:8 5' F<:8' <:' 68 ' <>' 5;8' B7 5:7C5 ' :8>8::8B' 5<' 7@' 5;7 ' C; G58:

'$% (.' "#' !$#'4 *' ' =9' .$ $ 4$ B<EC8558$

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' # % (' %0' &# 2' #00' =9') $ $ &7669$

&<<B' G7C5E:8 ' <>' ' EG;7@8' C8@8:9' :8' 5<' =8' ><E@B' 7@' %- 3#' 5 $$%(#'6!#' ")'

@B' 5;8' 6 58' :7@C7G 6' .$' '$ <:;8 $;87:' J<:I 0' ;<J8?8:0' C<@D 5 7@8B' @EF8:<E ' 8::<: ' 7@' :8A :B' 5<' 5;8' 7B8@57>7C 57<@' <>'5;8' G8 I 0' @B0' F<@A 5' <5;8: 0' 5;89' :8>8::8B' 5;8' EG:8F C9' 5<' 5;8' <@5' 86?<EL0' 5;8' ;7A;8 5' G<7@5' <>' J;7C;' 5;89'58:F8B' 5;8' <7@58' B8 ' :C7@8 0' <:' B8 ' C:7@ $:7@C7G 6' 4<:=8 ' 8::<@8<E 69' 7B8@57>78B' 5;8' ;7A;' G8 I' 88@' >:<F' 5;8' ? 6689' <>' 5;8' 5$;:7 5<G;80' J75;' 5; 5' 88@' >:<F' 5;8' ? 6689' <>' 5;8' 'E: @C80' @B' G<I8' <>' =<5;' ' 5;8' <@5' 86?<EL0' @B' $ B8' 8 EF<@5' C<F F7558B' 7F76 :' F7 5 I8 $ @' G<7@5' <>'> C50' 5' 5;8' 57F8' J;8@' $ B8' 8 EF<@5' @B' 4<:=8 ' J:<58' 5;87:' :8 G8C57?8' F8F<7: 0' 5;8' G:<G8:' :86 57<@' <>' 5;8' < 5' 86?<EL' 5<' 5;8' @87A;=<E:7@A' EF F75 ' ; B' =88@' B858:F7@8B'=9'5;8' 8@A7@88: ' 8FG6<98B' <@' 5;8' E:?89'><:' 5;8' F G' <>' 4: @C80' =E5' 5;87:' <= 8:? D 57<@ ' J8:8 @<5' 5;8@' CC8 7=68' 5<' 5;8' GE=UC0' 65;<EA;' 5;89' ; B' 8?7B8@569' =88@' 88@' =9' $ B8' 8 EF<@5' ;7 ' G :59' <>' E:?89<: 0' 68B' =9' G5 7@' 'E: @B0' F B8' 5;8' C8@5' <>' <@>' 86?<EL' >:<F' 5;8' 7B8' <>' 5;8' (6' BR 768>:<7B8K5; 5' 7 0' >:<F' 5;8' B7:8C57<@' <>' (6' <E7 8K7@' Q $ CC<:B7@A' 5<' 5;8' @ 57?8 ' <>' 5;8' (6' <E7 80' 5;89' A<5' 5<' 5;8' 5<G' <>' 5;8' 8C<@B' G8 I' 7@' ;87A;50' @B' :8F 7@8B' EG<@' 750' 6<BA8B' 7@' ' 58@5' ><:' 8?8: 6' B 9 0' 5' ' ;87A;5' <>' Q0 2' >885$;89' 5<<I' @EF8:<E ' G<:58:' 5<' C ::9' 9<<B' ><:' >7:8 0' @B' 8:8C58B' ' 6 :A8' C 7:@' <@' 5;8' EF F750' J;7C;' ; ' C E 8B' 5;8' @ F8' <>' 7C' B8' 6 ' 9: F7B8' 5<' =8' A7?8@' 5<' 5;87:' EF F75$

P' @' 2 0' $ E7 8EL' F B8' 5;8' C8@5' >:<F' 5;8' F8' B7:8C57<@0' =E5' ;7 ' (6' <E7 @' AE7B8' 5<GG8B' ;<:5' <>' 5;8' EF F750' @B' 66<J8B' 5;7 ' C<E: A8<E ' 5:<@<F8:' 5<' G:<C88B' =9' ;7F 86>$

@' 5;8' F7BB68' <>' EAE 5' 0' 8 :$ <@@890' J I ; J0' @B' 5;8J 0' J75;' 7C;86' :<S' <>' ; F<E@7L0' 5:78B' 5<' C8@B' 5;8' R86?<EL0' 67I8J7 8' >:<F' 5;8' F8' B7:8C57<@$;8 8' A8@568F8@' G8@5

1 ' ' =9' ;$ <B78:0' .$ 96<:0' @B' $ B8' 7668EL0' @B' 7@' <:B' <@ ' <@R' 1 9 ' ' $ '% ' &' $ ') ' ' $ ' 4 '$' '?

@' $ E7 8EL' 5<<I' ><:' AE7B8' ' F @' @ F8B' 78::8' <:@8<EB0' <>' 6 EL' 7@' 5;8' (6' <E7 80' J;<' ; B' CC<FG @78B' G5 7@' 'E: @B' 7@' Q $ @' 0' 5;8' 8LG8B757<@' <>' $ E7 8EL' J ' HE758' ><:A<558@' 7@' 5;8' (6' <E7 8$ ' F' 7@B8=58B' 5<' $ E7 8EL' ><:' 5;8' =<?8' @B' <5;8:' B85 76 $

'

8?8: 6 B 9 ' @B @7A ; 5 ' EG<@ 5 ; 8 F <E@5 7@6 @B6 8@C<E@58:7@A ; B J8 5 ; 8:6 <@69 55 7@8B ' ; 87A ; 5 <> 02 ' >885$

$ .8 @ U89@ EB6 <> J ; < F ' F 8@57<@ ; ' =88@ F B8 7@ 5 ; 8 G:8D C8B7@A C ; G58:6 CC< F G @78B 5 ; 8 G :59 <> :$ 5 ; 8 J 6 @B ; 8 J ' <> G7@7<@ 5 ; 5 5 ; 8 558 F G5 ; B =88@ F B8 5<< 6 58 7@ 5 ; 8 8 <@$ 8 7B 5 ; 5 5 ; 8 J8 5 ; 8:' J ' E E 669 A<<B 8@<EA ; ><: ; 7A ; F <E@5 7@ C8@5 ' ' BE:7@A 5 ; 8 6 5 >8 J ' B 9 ' <> . E69 6 @B 5 ; 8 >7: 5 <@8 ' <> EAE 50P @B EAA8 58B 5 ; 5 J8 ; <E6B 558 F G5 5< C8@B 5 ; 8 F <E@5 7@ 7@ 5 ; 8 ><66< J7@A 98 : 5 5 ; 5 57 F 8$; 8 G:<D G< 757<@ J ' ' 58 F G57@A <@8 @B 89@ EB ' C<:B7 6 @B F <B8 5 F @@85 F B8 75 7: :8 7 57=68 65 ; <EA ; 5 ; 8:8 88 F 8B F 66 C ; @C8 5 ; 5 J8 ; <E6B ECC88B J ; 8:8 ' G :59 EC ; ' 5 ; 5 <> :$ 5 ; 8 J ' ; B =88@ =8 58@$

5 5 ; 8 =8A7@@7@A <> . E69 6 ' B8 G 5C ; 8B 5< 89@ EB >:< F ?:8 6 =6 @ I 85 ' MJ ; 7C ; J 8:8 5 L8B ' Z G:<677=758B > =:7C 3N6 :<G8 6 @B <5 ; 8: 5 ; 7@A ' B8 7: =68 ><: 5 ; 8 8LCE: 7<@6 @B 85 <E5 <@ 5 ; 8 5<E: <> : @C8 6 =E5 6 ><E: J88 I ' 6 58:6 5 %7 F 8 6 ><E@B F 9 86> C< F D G685869 C<66 G 8B =9 5 ; 8 ; 8 50 5 ; 8@ 2 4 ; 5$ 7@ 5 ; 8 ; B8 6 < ' 5<< I ' @7A ; 5 5: 7@ 5 <@C8 5< &:8@<=68$

&:8@<=68 7 ' ' 5< J @ EG<@ J ; 7C ; ' ?<6E F 8 F 7A675 =8 J :7558@$ 5 ' 75E 57<@ 7 ' G:<= =69 5 ; 8 >7@8 5 <> @9 7@ 4: @C8 6 @B 5 ; ' ?78 J ' >:< F 75 ' ; 7A ; ' ><:5 ' :8 EG8:=$; 8 F < 5 @<58 J <:5 ; 9 7@ 575E57<@ <> 5 ; 8 5< J @ 7 ' <@8 J ; 7C ; ' ; ' CHE7:8B ' B8 8:?8B C868=7"759 ! K 5 ; 8 <C7 57<@ 67 F 8@5 7:8$; 7 ' 7@ 575E57<@6 J ; 7C ; ' J ' 5 :58B @8 :69 5 J 8@59 98 : ' A< =9 <F 8 <> 5 ; 8 J866 5< B< 7@ ; =75 @5 6 J ' ><E@B8B J75 ; ' 5 ; 8 8LG:8 ' <=!8C5 <> A7?7@A 5< 5 ; 8 J<: I 7@A <: @88B9 G<GE6 D 57<@ =8558 : ' ><<B6 =8558 : C<< I 8B @B 5 ' 6< J 8 : G:7C8 6 5 ; @ C<E6B =8

P ; 7 ' 7 ' ' C< F F <@ 97@A 7@ ' @G ; 7@8$ 5 F 8 @ ' 5 ; 5 5 ; 8:8 7 ' E E 669 68 ' @< J ' <@ 5 ; 8 F <E@5 7@ ' BE:7@A 5 ; 8 8 B 9 ' 5 ; @ 5 @9 <5 ; 8:' 57 F 8 <> 5 ; 8 98 :$; 8 @ 57?8 ' ; ?8 @ 6 F < 5 C ; 76B7 ; ' B:8 B <> ?8@5E:7@A EG<@ @< J ' <: A6 C78: 6 @B ; 8@C8 5 ; 8 G8:7<B <> F 7@7 F E F ' @< J ' 88 F ' 5< 5 ; 8 F ' 5< =8 5 ; 8 F < 5 > ?<E: =68 57 F 8 ><: 8LD CE: 7<@ $

5 ' Z ; 8 F <B86 7@ 575E57<@ <> 5 ; 8 I 7@B 7@ 4: @C8 7 ' B F 7558B 5< =8 5 ; 8 c <C7 D 57<@ 67 F 8@5 7:8 R <> &:8@<=68 AB ' ' &) 9= 4 ' ' C 6 C I J<<B6 Q

<=5 7@8B' 5' :8 5 E: @5 ' <:' 5'5;87:' <J@' ;<F8 $ 8:8'5;8'7@; =75 @5' <>' &:8@<=68' C @' <=5 7@' ' B7@@8:' <>' ' HE :5' <>' <EG0' F8 5' <:' >7 ;0' ?8A85 =68 0' B8 8:50' =:8 B0' @B' ' HE :58:' <>' ' 675:8' <>' <E@B' J7@80' ><:' 5;8' EF' <>' 7LG8@C8' ; 6>G8@@9$ 8F=8: ;7G' 7 ' CHE7:8B' =9' 5;8' G 9F8@5' <>' ' F 66' EF K ' =8678?8' 5J<' >: @C 0 =E5' B7@@8: ' 57CI85 ' FE 5' =8' =<EA;5' 7@' B? @C80' @B' @<' C:8B75' 7 ' A7?8@$;8' 6<J8:' <:B8: ' ; ?8' @<5' =88@' 6<J'7@' :8C<A@7 7@A' 5;8' B? @5 A8 ' 5<' =8' B8:7?8B' >:<F' C<@@8C57<@' J75;' 5;8' <C7 57<@' 677@8@5 7:80' J;7C;' 7 ' 7B' 5<' ; ?8' G:<BEC8B' 5;8' ; GG78 5' :8 E65 ' F<@A' 5;8F$ 5' 7 ' C:8B75 =68' 5<'5;8' F @ A8F8@5'5; 5'5;7 ' 7@ 575E57<@' @<5' <@69' G 9 ' 75 ' 8LG8@ 8 0' =E5' 9786B ' ' F 66' G:<>75$

65;<EA;' &:8@<=68' F 9' > 7:69' =8' G:<EB' <>' 5;7 ' <C7 57<@0' 7@' <5;8:' F 558:' 75';' ' C E 8' 5<' =8' ; F8B$ 5' 5:885 ' :8' @ ::<J0' 766 G ?8B0' @B' 5<:5E<E 0 @B' 75 ' F866 0' @B' 5;8'7FG:<G:78578 ' 5<' ;8' 88@' 7@' 75 ' ;<E 8 0' FE 5' =8' I@<J@' 5<' =8' GG:8C7 58B$P

' 6< 5' F9' J 9' 7@' 5;8' 5:885 ' <>' 5;7 ' G7C5E:8 HE8' =E5' @<7 8 <F8' 5<J@0' @B' ; ?7@A' =E5' ' ; 6> ;<E:' 68>5' 7@' J ;7C;' 5<' A85' ' B7@@8:' @B' 5 I8' ' G6 C8' 7@' 5;8' B767A8@C80' J ' @<5' J866' G68 8B' 5<' ;8 :' 5; 5' @' @A67 ;F @' J7 ;8B' 5<' 88' F8$ 5' 5E:@8B' <E5' 5<' =8' F9' >:78@B' CD B<@ 6B0' J;<' C<@>7C68B' 5<' 7@8' 5; 5' ;8' J ' A<7@A' 5<' 5:9' 5<' C8@B' ' F<E@57I7@' C 668B' 86?<EL' 7@' 5;8' C<E: 8' <>' 58@' B 9 0 =E50' <@' ;8 :D 7@A' <>' F9' 7@58@57<@ 0' A:88B' 5<' !<7@' E ' 5' ' 8 88' <@' 5;8' B' <>' EAE 5$ @' ' >8J' F<F8@5 ' F<:8' ' J ' G8:C;8B' 7@' 5;8' = @HE8558' P ' ' ><:' <E:A' BR 9 @ 0' 7@' ' F7 8: =68' ?8;7C68' J;7C;' 5<<I' @8 :69' 87A;5';<E:' 5<' CC<FG67 ;' 68 ' 5; @' ' F768 $

5' >7?8' <@' ' 6<?869' F<:@7@A' ' ;<E6B8:8B' 7@9' I@ G CI' @B' 5 :58B' ><:' :7 @ <@$ & ES9' F7 5 ' C6E@A' 5<' 5;8' F<E@5 7@ 0' =E5' F8658B' J 9' J;8@' 5<EC;8B' =9' 5;8' E@0' @B' B7 GG8 :8B' =9' !8:I ' M7@' 5;8' F @@8:' <>' ?78J ' J;8@' ><CE 8B' 7@' ' F A7C' 6 @58:@N0' :8 ' P' Z' 8 ' F 7 <E ' <@5' =8 EC<EG' G6E ' @7 6G:<G:8 ' HE8' 68 ' :E8 $ ' G6EG :5' B8 ' 6688 ' 85' B8 ' 8 8 678: ' :8 8F=68@5' =4 B8 ' B8GB5 ' GE=67C ' BR7F F<@B7C8 $ ' @ ' 6 ' ?787668' ?7668' 68 ' F 7 <@ ' @R<@5' G ' B8' C<@C78:A8$ 8 ' ; =75 @5 ' B8' 6 ' ?7668' >>67A8 ' B8' B8G6<: ' * =68 ' ; =75EB8 0' 9' 8@57 8@5 7@C8 F8E5' @ ' C:EG68' 85' @ ' GEB8E:0' 85' : :8F8@5' 68 ' G:<G785 7:8 ' <E' 68 ' 6<C 5 7:8 ' R <C78@5' 8@5:8' 8EL' G<E:' > 7:8' B7 G : 75:8' 68 ' <:BE:8 ' HE7 B8 ;<@<:8E5' 68E:' B8FCE:C$3K .< @@8R ') ' 2' % 2 $ ' ?<6$ 7$ G$ $

?8 67@A' 5 ; 8' J <@B8 :>E669' =8@5' @B' ><6B8B' 5: 5 ' 7@' 5 ; 8' 67F8 5<@8' C67>> ' =8 ; 7@B' 5 ; 8' 5<J@$; 8@' ' 8@58 : 8B' 5 ; 8' <F=8' B8' 6? 60' @B' ; 8 : B' 5 ; 8' <F @C ; 8' 8 57@A' 75 ' J 9' 5 ; : <EA ;' 5 ; 5' J <@B8 :>E6' A<: A80' @B' G 8B' <@' 5<' 8' ' EG ; 7@0' J ; 8 : 8' 5 ; 8' >7: 5' A6 C78 :' C F8' 7@5<' ?78 J0' 5 767@A' <?8 :' 5 ; 8' F<E@5 7@' 7B8' <@' 5 ; 8' :7A ; 5$ 4 :<F' 5 ; 7 ' G6 C8' E@576' 5 ; 8' EF F75' <>' 5 ; 8' <6' B8' @5 :85' J ' G 8B0' 8?8 :9' A G' 7@' 5 ; 8' F<E@5 7@ ' ; <J8B' ' A67558 :7@A' A6 C78 :' <:' ' < :7@A' G8 I' 0 5 ; 8' >7@8 5' ?78 J' J ' 5' ' &: ?80' J ; 8 : 8' 5 ; 8' 87!8' :7 8 ' =9' ' 8 :78 ' <>' 5 : 8 F 8@B<E ' G : 8C7G7C8 ' ' >885' =<?8' 5 ; 8' :< B$P' ; 8' >7@8 5' B7 D 5 @5' ?78 J' <>' 5 ; 8' G ' 7 ' 88@' >58 :' C :< 7@A' 5 ; 8' <60' @8 :' <E8578 :$ ' F<E@5 7@0' C<F F<@69' EGG< 8B' 5<' =8' <@58' (7 <0' GG8 : ' 5' 5 ; 8' 8@B' <>' 5 ; 8' ?7 5 0' ; <<57@A' 7@5<' 5 ; 8' I9' F' 5 ; 8' F7BB68' B7 5 @C80' =E5' 576' 58@' F768 ' <>>0' 7 ' :7 @ <@' J75 ;' 75 ' 7@58 : F7@ =68' ><:5 0' @B' 7@' 5 ; 8' ><:8A:<E@B0' 68 BFA' B<J@' 5<' 5 ; 8' &E7 @80' @B' :7 7@A' ; 7A ;' EG' 5 ; 8' @87A ; =<E:7@A' 6<G8 0' :8' >8 :5768' >786B 0' 5EBB8B' J75 ;' ?766 A8 ' @B' C ; E:C ;' G7:8 $; 8' @8L5' B 9' ' J 6I8B' <?8 :' >:<F' :7 @+<@' 5<' ' 8 M+80' 5<' F9' J<:5 ; 9' >:78@B' .8 @' 89@ EB0' 5 ; 8' E:?89<:' <>' :< B ' <>' ; 7 ' B7 5:7C5$

66' 5 ; 8' G8 I ' <>' <@5' 86?<EL' :8' J866' 88@' >:<F' ' 8 >80' 5 ; 8' ; 7A ; 8 5' G<7@50' ' J866' ' 5 ; 5' EG<@' J ; 7C ;' 5 ; 8' 8@A7@88 : ' 8 :8C58B' 5 ; 87 :' C 7 :0@$ %875 ; 8 :' 89@ EB' @<:' @9' <@8' 86 8' I@8J' 5 ; 7>5$; 8' @ 57?8 ' I@8J' <@69' 5 ; 5' 5 ; 8' 8@A7@88 : ' ; B' C8@B8B' <@8' G8 I0' @B' ; B' 88@' >:<F' 5 ; 5' ' 576' ; 7A ; 8 :' G<7@50' J ; 7C ;' 5 ; 89']C 668B' 5 ; 8' <7@58' B8 ' :<7@8 ' <:' B8 ' C:7@ $; 89' C<E6B' @<5' 9' J ; 85 ; 8 :' 5 ; 7 ' 6 558 :' C<E6B' =8' 88@' >:<F' ' 8 880' @<:' C<E6B' 5 ; 89' 5866' 5 ; 8' G8 I' EG<@' J ; 7C ;' 5 ; 8' C 7 :@' ; B' =88@' 8 :8C58B$) 8' J8 :8' E@B8 :' 5 ; 8' 7FD G:8 7<@' 5 ; 5' 5 ; 8' ; 7A ; 8 5' G<7@5' J ' C<@C8 68B' =9' 5 ; 8' G8 I ' J8' J0' @B' J<E6B' =8' A 7@8B' =9' G 7@A' <?8 :' 5 ; 8F$; 89' I@8J' @<5 ; 7@A' <>' 5 ; 8' C8@5' <>' <@ 78E :' E7 8EL0' @B' 5 ; 89' C<@>7B8@569' 8 :58B' 5 ; 5' 5 ; 8' ; 7A ; 8 5' G<7@5' <>' <@5' 86?<EL' ; B' @<5' =88@' 55 7@8B' =9' @9' <@8' 0 75' J ' 5 ; 7 ' G<7@5' J8' J7 ; 8B' 5<' :8 C ;$ 0

P' 88' C ; G58 :' ?777$

*' <@58' (7 <' 7 ' @<5' 88@' >:<F' 5 ; 8' @5 :85' < B$; 5' 5 ; 7 ' 7 ' <' 7 ' 88@' J ; 8@' <@8' C:< 8 ' 5678' <6' B@' & 67=78 :0' <@' 5 ; 8' <E5 ;' 7B8' <>' J ; 7C ;' G ' 5 ; 8' <@58' (7 <' 7 ' ?7 7=68' ><:' ' ; <:5' 57F8$

Nothing prevented our starting at once but the absence of Macdonald and the want of a bâton. Reynaud suggested a visit to the postmaster, who possessed a bâton of local celebrity. Down we went to the bureau; but it was closed: we halloed through the slits, but no answer. At last the postmaster was discovered endeavouring (with very fair success) to make himself intoxicated. He was just able to ejaculate, "France! 'tis the first nation in the

MONT PELVOUX FROM ABOVE LA BESSÉE.

world!" which is a phrase used by a Frenchman when in the state that a Briton begins to shout, "We won't go home till morning"—national glory being uppermost in the thoughts of one, and home in those of the other. The bâton was produced; it was a branch of a young oak, about five feet long, gnarled and twisted in several directions. "Sir," said the postmaster, as he presented it, "France! 'tis the first—the first nation in the world, by its"—he stuck. "Bâtons?" I suggested. "Yes, yes, sir; by its bâtons, by its—its," and here he could not get on at all. As I looked at this

F " " (!' ! ' 4 ' (! 6# *

9<E@A' 67F=0 ' 5;<EA;5 <>' F9' <J@'0 =E5 8!F EB0 J;<' I@8J' 8?8:95;7@A' =<E5 ?8:9=<B9' 7@' 5;8' ?766 A80 7B' 5;8:8' J ' @<5' ' =8558:' <@80 <' <>>' J8' J8@5' J75;' 750 68 ?7@A' 5;8' <>>7C7 6 5 AA8:7@A' 7@' 5;8' :< B' @B' FE558:7@A0 Z'4: @C8' R57 ' 5;8' >7: 5' @ 57<@' 7@' 2>>78 J<:6B 3

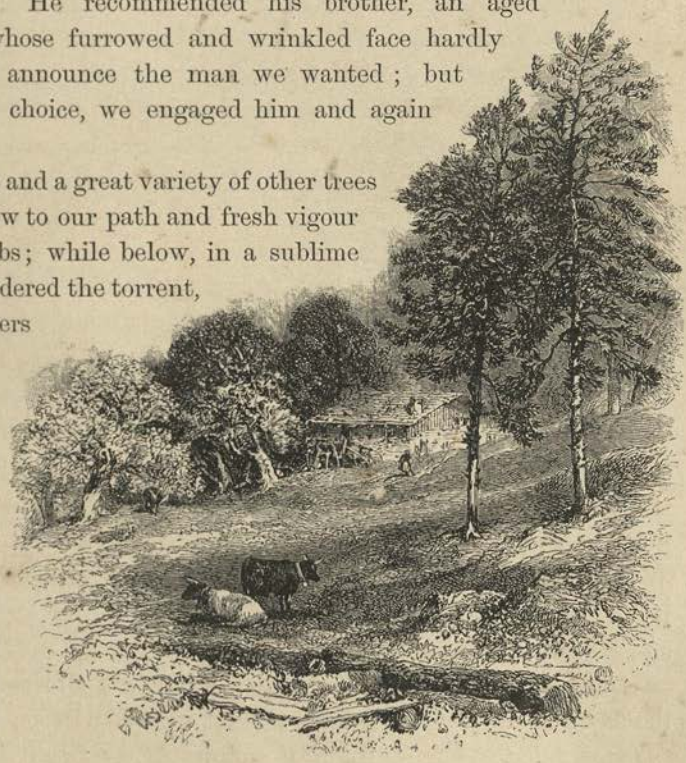
;8' B' <>' EAE 5' C F80 =E5 CB<@ 6B' B7B' @<5' GG8 :0 <' J8' 5 :58B' ><:' 5;8' (6' <E7 8'0 <E:' G :59' C<@ 7 57@A' <>' 89@ EB0 F9D 86>0 @B' ' G<:58:0 .8 @' 7F7:' &7: EB0 @7CI@ F8B' Z'675568' @ 03 5;8' ;<8F I8:' <>' 5;8' G6 C8$' @' ;<E:' @B' ' ; 6>R' F :5' J 6I7@A' 5<<I' E ' 5<' ' (7668' B8' 6' <E7 80 <E:' ;8 :5 ' A6 BB8@8B' =9' 5;8' A6<:7<E ' G8 I ' <>' 86?<EL' ;7@7@A' <E5' J75;<E5' ' C6<EB' :<E@B' 5;8F$' ' :8@8J8B' CHE 7@5 >@88' J75;' 5;8' F 9<:' <>' Z ' (68$3 7 ' G8C5' J ' <:7A7@ 60 @B' ;7 ' F @@8: ' J8:8' A: C7<E 0 =E5' 5;8' <B<E:' J;7C;' G:<C88B8B' >:<F' ;7F' J ' B:8 B>E6 ;8' F8' F 9' =8' 7B' <>' @6< 5' <>' 5;8' 7@; =75 @5 ' <>' 5;8 8' ? /89 $P

89@ EB' I7@B69' E@B8:5<<I' 5<' 6<<I' >58:' 5;8' C<F F7 :7 50 @B' ' ><E@B' 5<' F9' @@<9 @C80' J;8@' J8' J8:8' =<E5' 5<' 68 ?80 5;5' ' ; B' A7?8@' 5 C75' C<@ 8@5' 5<' ' F 66' J7@8 C I' =87@A' C ::78B' J75;' E 0 J;7C;' J ' ' A:8 5' @E7 @C8' >:<F' 5;8' C<F F8@C8F8@5$' 5' J ' 8LD C8 7?869' J I J :B' 5<' ; @B68'0 <@8' F @' 5:78B' 5<' C ::9' 750 @B' 5;8@' @<5;8:0 @B' 5' 6 5' 75' J ' 6E@A' >:<F' <@8' <>' <E:' =>75<@ 0 +7B' J ' C ::78B' =9' 5J<0 J;7C;' A ?8' <E:' G :59' 5;8' GG8 :@C8' <>' ' F8C; @7D C 6' B7 A: F' 5<' 6E 5: 58' 5;8' E 8 ' <>' 68?8: $

P ;87:' 6 58' G:8>85' ; 66' 5866' J;9$' Z ;86@8@' @B' J<F8@' B:8 '7@' ;88G I7@ 0 K J;7C;' ; ?8' =88@' B:78B' @B' C<E:8B' J75;' 650 <>' J;7C;' 5;8' >885' :8' E 8B' ' C6 G 0 5;8' ><:8' >885' A<7@A' :<E@B' 5;8' @8C I0 @B' 5;8' ;7@B8:' <@8 ' :<E@B' 5;8' 6<7@ $;87:' :F ' :8' @ ;8B0 @B' 5;8' F8@' :8' <@69' B7 57@AE7 ;8B' >:<F' 5;8' J<F8@' =9' 5;8' ><:F8:' J8 :D 7@A' J:85C;8B' B: J8: 0 @B' 5;8' 6 558:' ' <:5' <>' A<J@0 J;7C;' <@69' C<?8: ' 5;8F' 5<' !E 5' =86<J' 5;8' I@88 $;89' 688G' J75;<E5' E@B:8 7@A' EG<@' 5: J0 @B' ; ?8' <@69' ;88GD I7@ ' ><:' C<?8:7@A $ $ $ $;8' @ 5E:8' <>' 5;87:' ><<B0 C<F=7@8B' J75;' 5;87:' B7:57@8 0 F I8 '5;8F' 8L; 68' ' 5:<@A' <B<E:' >:<F' 5;87:' =<B78 0 J;7C;' 7 ' F865' >:<F' > :0 @B' J;7C;' 7 ' 6F< 5' 7@ EGG<:5 =68' 5<' 5: @A8: $ $ $ $;89' 67?8' 77+' ' F< 5' 7@B7>>8:8@5' F @@8:0 <:' : 5;8:' 5;89' 67@A8:' 7@' B:8 B>E6 F7 8:90' 5;8F' >765;9' @B' ;7B8<E ' C<E@D 58@ @C8 ' @@<E@C8' 5;87:' 6<?8@67@8 ' @B' 5;87:' 57@6 0$3K B<EC8558R' 4 ' ' 4 * = ' GG$ 1$;8' ;88G I7@ ' :8' @<J' ?-<:@' <@69' =9' 5;8' G<<:8 5' <>' 5;8' @ 57?8 0 =E5' 5;8' :8 5' <>' 5;8' B8 C:7G57<@' 7 ' E>>7C78@569' CCE: 58$

At "La Ville" the Val Louise splits into two branches—the Val d'Entraigues on the left and the Vallon d'Alefred (or Ailefroide) on the right; our route was up the latter, and we moved steadily forwards to the village of La Pisse, where Pierre Sémiond lived, who was reputed to know more about the Pelvoux than any other man. He looked an honest fellow, but unfortunately he was ill and could not come. He recommended his brother, an aged creature, whose furrowed and wrinkled face hardly seemed to announce the man we wanted; but having no choice, we engaged him and again set forth.

Walnut and a great variety of other trees gave shadow to our path and fresh vigour to our limbs; while below, in a sublime gorge, thundered the torrent, whose waters took their rise from the snows we hoped to tread on the morrow.



IN THE VAL D'ALEFRED.

The mountain could not be seen at La Ville, owing to a high intervening ridge; we were now moving along the foot of this to get to the châlets of Alefred, or, as they are sometimes called, Alefroide, where the mountain actually commences. From this direction the subordinate, but more proximate peaks appear considerably higher than the loftier ones behind, and

sometimes completely conceal them. But the whole height of the peak, which in these valleys goes under the name of the "Grand Pelvoux," is seen at one glance from its summit to its base, six or seven thousand feet of nearly perpendicular cliffs.

THE GRAND PELVOUX DE VAL LOUISE.

The châlets of Alefred are a cluster of miserable wooden huts at the foot of the Grand Pelvoux, and are close to the junction of the streams which descend from the glacier de Sapenière (or du Selé) on the left, and the glaciers Blanc and Noir on the right. We rested a minute to purchase some butter and milk, and Sémiond picked up a disreputable looking lad to assist in carrying, pushing, and otherwise moving the wine-cask.

Our route now turned sharply to the left, and all were glad that the day was drawing to a close, so that we had the shadows from the mountains. A more frightful and desolate valley it is scarcely possible to imagine; it contains miles of boulders, débris, stones, sand, and mud; few trees, and they placed so high as to be almost out of sight; not a soul inhabits it; no birds are in the air, no fish in its waters; the mountain is too steep for the chamois, its slopes too inhospitable for the marmot, the whole too repulsive for the eagle. Not a living thing did we see in this sterile and savage valley

M6E:7@A' ><E:' B 9 0 8LC8G5' <F8' >8J' G<<:' A< 5 ' J6:7C67 ; B' =88@' B:7?8@' 5;8:8' A 7@ 5'5;87:' J766$

5' J ' ' C8@8' 7@' I88G7@A' J75;' 5;8' B7 =<67C 6 B88B' G8:G85: 58B' ;8:8' =<E5' ><E:' ;E@B:8B' 98 : ' A<K5;8' FE:B8:' <>' 5;8' (EB<7 ' <>' (6 <E7 80 7@' 5;8' C ?8:@' J;7C;' J ' @<J' 7@' 7A;50 5;<EA;' ;7A;' =<?8' E $;87:' 5<:9' 7 ' ?8:9' B$ 8 C8>E6 @B' 7@BE 5:7<E 0 ><:' F<:8'5; @' 5;:88' C8@5E:78 ' 5;89' ; B' 7@; =758B' 5;8 8' :857:8B' ? 6689 ' 7@' 5: @HE76 <= CE:759$;8' :C;=7 ;<G ' <>' F;:E@' 8@B8 ?<E:8B0 ;E5' J75;' ;5568' ECC8 0 5<' A85'5;8F' J75;7@' 5;8' G 68' <>'5;87:' C;E:C;' 0 5;87:' 8>><:5 ' J8:8' 7B8B' =9' <5;8: 0 J;' C<F F8@C8B' =9' 7FG:7 <@D F8@5 ' @B'5<:5E:80P' @B' 5'6 5' B<G58B'5;8' F85;<B' <>'=E:@7@A'5;8F' =9';E@B:8B ' 5'5;8' 5 I8$Y>

@'5;8'98 :' 2 0 6=8:5' 55 @880 :C;B8 C<@' <>' :8F<@ ' @B' 68A 58' <>' <G8' @@<C8@5' ($0 J<:BB' ; ?8' @57C7G 58B' 5;8' = := :7D 578 ' J;7C;' 5' '6 58:' B 58' :<E 8B'5;8' 7@B7A@ 57<@' <>' 765<@' @B'5;8' >8 : ' <>' :<F J866 =E50 B:7?8@' 8?8:9J;8:8' = CI' =9'5;8') 6B8@ 8 ' <>' 78BF<@50 ;8' 68>5'5;87:' ? 6689 ' @B' C:< 8B'5;8' <@5' &8@8?:8'5<' 55 CI'5;8' J8 I8:' @B' F<:8' 5;7@69' G<GE6 58B' ? 6689 ' <>'5;8' F' B<7 ' 7@' ' EG;7@+$ 5'5;8' ;8 B' <>' @' :F9' J;7C;' 7 ' 7B'5<' ; ?8' =88@' C<FG< 8B' <>' ? A =<@B 0 :<==8: 0 @B' 7@ ' MJ;<' ; B' =88@' 58FG58C7' 5<' ;7 ' = @@8:' =9' G:<F7 8 ' <>' = <6E57<@' =8><:8; @B0 <>' =87@A' 85' >:88' >:<F' 5;8' <=67A 57<@' <>' ?<J ' J;7C;'5;89' F7A;5' ; ?8' F B80 @B' =9'5;8' C<@>7:F 57<@' <>' G:<G8:59' 5<' 5;8F' J;7C;' 5;89' F7A;5' ; ?8' J:<@A>E669' CHE7:8BN0 ' J866 ' :8AE6 :'5:<<G 0 55 @88' G<E:8B' B<J@' 5;8' ? 6689' <>'5;8' 'E: @C8$;8' 7@; =75 @5 ' <>'5;8' (6 <E7 8' >68B' =8><:8' ' ;< 5'5; 5' J ' 58@' 57F8 ' 5;87:' @EF=8:0 @B' 5<<I' EG' 5;87:' =<B8' 7@' 5;7 ' C ?8:@0 J;8:8' 5;89' ; B' C<668C58B' G:<

P' 5' =8C F8' ' :8AE6 :' =E 7@8 $ Z) 8' >7@B' F<@A 5'5;8' CE::8@5' CC<E@5 ' <>'5;8' 767>' <>' F=: @'5;7 ' 7@AE6 :' :57C68B7) '& ' 2 '' &$' 1 2 ' '$' ' '&$ *G ' &' DAK E 5<@0' ?<60' 7$ G$ $

5' @'5;8' QQB' <>+ $ 9' 0 87A;59' G8: <@ ' <>'5;8' ? 6689 ' <>' 4:87 7@78:8 ' @B' :A8@575:80 @B' <@8' ;E@B:8B' @B' >7>59' G8: <@ ' <>'5;8' (6 <E7 80 J8:8' =E:@5' 5' :@=:E@$K E 5<@0' ?<6$ 7$ G$ 2 $

$ 88' <:6 @BR' 4 '' &' $ ' ' ' $2 $ ' &' ' '0 M;R+' J866R' ' '0 @B' E:5<@R' % ' Q 0

G&) , % -' . ' * &' %+) 6# *

?7 7<@ ' E>>7C78@5 ><:' 5J<' 98 : $ E5 7@5<68: @C8 7 ' 8?8:' G 7@ D 5 I7@A0 56787:' :85:8 5 J ' B7 C<?8:8B$ 55 @88 ; B ' C G5 7@ J ;< C<F=7@8B 5 ;8 :8 <E:C8 ' <> ' 8:<B5<' 5 ;8 C:E8659 <> ' 867 78:0 @B0 6<J+8:7@A ;7 ' F8@ =9 :<G8 0 >7:8B G768 ' <>=:E ;J<<B 5 5 ;8 8@5: @C8 5<' 5 ;8 C ?8:@0 E>><C 58B 5 ;8 F !<:7590 @B 68J' 5 ;8 :8F 7@B8:$;8 (EB<7 ' J8:8 :868@568 69 8L58:F7@ 58B0 J75 ;<E5 B7 57@C57<@ <> A8 <:' 8L$ <:8 5 ; @ 5 ;:88 5 ;<E @B G8: <@ 0 75 7 ' 7B0 G8:7 ;8B 7@ 5 ;7 ' >:7A ;5>E6 F C:8 0 5 ;8 A:<J5 ;' <> 5 ;:88 ;E@B:8B @B >7>59 98 : ') ' B8 5:<98B 5 <@8 =6<J0 @B 5 ;8 ? 6689 J ' C<FG6858699 B8G<GE6 58B$ <E7 ' T $ C E 8B 75 5<' =8 :8 G8<G68B0 @B >58:' @<5 ;8:' 5 ;:88 C8@5E:78 ' @B ' ; 6>0 =8 ;<6B 5 ;8 :8 E65K ' : C8 <> F<@I89 $""+

) 8 :8 58B ' 675568 5 ' F 66 G:7@A0 @B 5 ;8@ ; 58@8B <@JF:B ' 5766 J8 @8 :69 ::7?8B 5 5 ;8 ><<5 <> 5 ;8 G8@78:8 A6 C78:0 J ;8@ 8F7<@B 7B J8 FE 5 5E:@ 5<' 5 ;8 :7A ;50 EG 5 ;8 6<G8 $;7 ' J8 B7B0 @B C6 F=8:8B ><:' ; 6> @ ;<E:' 5 ;:<EA ;' C 558:8B G7@8 ' @B > 668@ =<E6B8: $;8@ 8?8@7@A =8A @ 5<' C6< 8 7@ : G7B69 @B 75 J ' 57F8 5<' 6<<I ><:' ' :8 57@A 976 C8$;8:8 J ' @<' B7>>7CE659 7@ A8557@A <@80 ><:' 66 :<E@B 75 E:@ ' C ; <57C 8F=6 A8 <> :<CI $) 8 868C58B 5 ;8 E@B8:' 7B8 <> <@80 J ;7C ;' J ' @7<:8 5 ; @ >7>59 >885 6<@A =9 5J8@59 ;7A ;0 C68 :8B 75 <>' :E==7 ;0 @B 5 ;8@ C<668C55B "J<<B ><:' ' >7:8$

; 5 C FG >7:8 7 ' G68 @5 :8F7@7 C8@C8$;8 J7@8 C I ; B A<5 5 ;:<EA ;' 66 75 ' 5:<E=68 '0 75 J ' 5 GG8B0 @B 5 ;8 :8@C ;7@8@ 88F8B 5<' B8:7?8 <F8 C<@ <6 57<@ >:<F' 75 ' 8L8C: =68 C<@58@5 $ U89@ EB C ; @58B C: G ' <> 4:8@C ;' <@A 0 @B 8 C ;' C<@5:7=E58B ;7

P ;8 C<7@F F78 <>' 5 ;8 (6 <E7 8 C<@5 7@ ' 5 5 ;8 G:8 8@5 57F8 =<E5 5 ' 7@ ; =7D 5 @5 $;7 ' <L857@ G<GE6 57<@ ; ' =88@ G569 B8 C:7=876 =9 $ 67 E8 U8C6E ' 7@ 5 ;8 <E:' M ' <@B80 >7 $ 8 9 K Z ;89 55 7@ 5 ;8 ;7A ;8 5 G< 7=68 B8?86<GF8@5 <> 5 ;87:' 7@58667A8@C8 7@ 5 ;87:' 7@> @C90 @B K =E@B @569 "6:<?7B8B J7567 F !8 57C A<75:8 0 J ;7C ;' :8 68@A5 ;8@8B @B J<668@ =9 A8 K :8 7@ 5 ;7 '@+ G8C567 I8 5 ;8 <E: @A <E5 @A 0 J ;< ; ?8 @<5 ;7@A F<:8 5< CHE7:8 >58:' 5 ;8 AMB <> 5 ;:88 98 : $ 5 5 ;8 A8 <> >7?8 98 : ' 5 ;8 675568 C:857@ ' ; ?8 6:8 B9 5 ;8 G6 C7B @B F 5E:8 8LG:8 7<@ J ;7C ;' 5 ;89 <EA ;5 5<' I88G 66 5 ;87:' 67?8 $ $ $ $;89)MP ' 5:<E 8: 0 @B C< 5 ' J75 ;' 5 76 0 @B ' 6 :A8 =6 CI ; 5$3

:8 5;8 A:8 5 G8CE67 :759 <> 5;8 86?<EL$P ;89 J8:8"?8:9 588G 7@ F @9 G6 C8 =E5 <@ 5;8 J;<68 >><:B8B A<<B ;<6B@ @B @< C67F=7@A ;<E6B ;8 C 668B B7>>7CE65 J;7C;' B<8 ' 5; 5$ &E6678 ' =<E@B8B F<@A 5;8F@ <F857F8 ' <> A:8 5 68@A5;' @B B8G5;$ $ ' J8:8 >:8HE8@569 :<558@@ @B J<E6B ; ?8 =88@ B7>>7CE65 ><:' ' 7@A68 F @5< G $;8 EGG8:F< 5 F8@ J8:8 C<@57@E 669 =E 8B ><:' B7 6<BA7@A :<CI ' @B ><:' ; :G<<@7@A 5;< 8 =86<J' J75;' 5;8F = 5<@ $ <J8?8:@ J75;<E5 5;8 8 7@C7B8@5 ' 5;8 C67F=7@A J<E6B ; ?8 =88@ BE66K5;89 ;86G8B5< =:8 I 5;8 F<@<5<@9$

) 8 J8@5 EG C;7F@89 ' @B AE6678 ' =9 5;8 ;<E:' 5<A85;8:@ @B 6J 9 ' 88F8B 5< =8 C<F7@A5< <F85;7A@ 65;<EA;' J8 @8?8:' A<5 5< 75$;8 <E567@8 I85C;' J766 ;86G 5< 8LG6 7@ 5;8

75E 57<@$) 8 5<<B 5 5;8 ><<5 <> ' A:8 5 =E5D

5:8 K G8:; G ' =<E5 Q ' >885 ;7A; K @B

6<<I8B EG$ 5 B7B @<5 A< 5< ' G<7@5 '

7@ 5;8 B7 A: F@=8C E 8 J8 C<E6B @<5

88 5;8 5<G@ 65;<EA;' J8 >865

C<@?7@C8B 5; 5 =8;7@B 5;8

>:7@A8 <> G7@@ C68 ' J8 * -

B7B 88 5;8:8 J ' '

5<G@ @B 5; 5 75 J ' 5;8

8BA8 <> 5;8 G6 58 E J8 < FEC;' B8 7:8B 5< 55 7@$ / G J8 F<E@58B@ @B :8 C;8B 5;8 G7@@ C68 ' @=E5@ 6< ' @<5;8:' 85 J ' 88@0K @B @<5;8:0K @B 985 F<:8K 5766 5 6 5 J8 :8 C;8B 5;8 5<G@ @B ><E@B 75 J ' <@69 ' =E55:8 @ @B 5; 5 J8 ; B 5< B8 C8@B 2 ' <:' ' >885 =8><:8 J8 C<E6B C<F F8@C8 5< F<E@5 A 7@$);8@ 5677 ' <G8: 57<@ ; B =88@ G8:><:F8B ' >8 J' B<S8@ 57F8 ' 75 =8A @ 5< =8 J8 :7 <F8@ 8 G8C7 669 ' J8 J8:8 7@ 5;8 B :I ' 5< <E:' J;8:8 =<E5 $ 8F7<@B@ ;<J8?8:@ 8@C<E: A8B E @ @B 7B I@8J' J8 J8:8 <@ 5;8 :7A;5 :<E580K < J 9 J8 J8@5 <@C8 F<:8$

5 J ' @<J' @8 :69 F7B B 9@ @B J8 88F8B @ ' @8 :8:' 5;8 EFD F75 <> 5;8 86?<EL' 5; @ J;8@ J8 5 :58B$ 5 6 5 J8 /'!<7@8B

P Z ;8 @EC68E ' <> 5;8 cF 7>?7 ' ' >7@8 G:<5<A7@8@ B7?7B8B'$=9 @8 :69 ?8:57C 6 C: CI $9+,% 0!'4 '#$

5<A85;8: @B ;86B ' C<E@C76$ Z 87@7<@B! <6B >:78@B0 B< 9<E I@<J J;8:8 J8 :8 @<J^3 Z ;98 0 G8:>8C5690 5< '9 :B @B ';6>3 Z)8660 5;8@0 ;<J FEC;' :8 J8=86<J5;7 'G6 58 E^3 8 >>7:F8B J8 J8:8 @<5 ;6> @ ;<E:>:<F5;8 8BA8 <>5;8 @<J$ Z(8:9A<<B 0 685 E 'G:<C88B$3 6> @ ;<E:G 8B0 @B 5;8@ @<5;8:0=E5 J8 J8:8 5766 7@5;8 F8 5 580KG7@@ C68 0=E55:8 8 0 @BAE6678 'J8:8 7@G:<>E 7<@0=E5 5;8 G6 58 E J '@<5 7@ 7A;5$ < J8 C 668B ;7F A 7@K><: ;8 ; B =88@ 5 :7@A =<E5 6 558:690 '7> 7@ B<E=5K @B :8G8 58B 5;8 HE8 57<@$ Z <J> :=86<J :8 J8 @<J^3)8660 ;8 5;<EA;5 75 F7A;5=8 ;6> @ ;<E:F<:8$ Z E5 9<E 7B 5; 5 !E 5 @<J0 :8 9<E E:8 J8 :8 A<7@A :7A;5^3 Z 8 0 ;8=8;8?8B J8 J8:8$3 8678?8B 5; 5 J<E6B @<5 B<$ Z :8 9<E E:8 J8 :8 A<7@A :7A;5><:5;8 78 B8 :C7@8 ^3 Z 78 B8 :C7@8 3 ;8 8! CE6 58B 7@ 5<@7 6LF8@50 7>;8 ; B ;8 :B 5;8 J<:B ><:5;8 >7: 5 57F8$ Z 78 B8 :C7@8 0 @< =E5><:5;8 G9: F7B0 5;8 C868=: 58B G9: D F7B ;8 ; B ;86G8B 5;8 A:8 5 G75 7@8 'E: @B03 85C$

8:8 J 7>L0K J8 ; B =88@ 5 6I7@A =<E5 75 5< ;7F ><: J;<68 B 90 @B @<J ;8 C<@>8 8B ;8 I@8J @<5;7@A =<E5 75 5E:@8B 5< 80>@ EB0 J;< 88F8B 5;E@B8: 5:ECI$ Z) ; 5 B7B ;8 EAA8 5^3 8 ;:7+A8B 677 ;<E6B8: $ Z)8660 3 J8 7B0 >58: 8LD G6 7@7@A <E: F7@B G:8559 >:8869 5< BF7<@B0 Z5;8 <<@8: J8 5E:@ =CI5;8=8558:0><: J8 ; ?8@<J7 ;5< 88 9<E:G9: F7B$3

)8 ; 658B><: @ ;<E:0 @B 5;8@ C<FF8@C8B 5;8 B8 C8@5$ 5 5<<I E @8 :69 8?8@ ;<E: 5< C<F8 B<J@5<<E: :CI [=;5 G 7B @< ;88B 5< 5;8 B7 5 @C80 @B B< @<5 :8F8F=8: @95;7@A =<E5 75$ (78@ J8 A<5 B<J@ J8 F B8 B7 C<?8:9 J;7C;' >>8C58B E ' FEC;' 5;8 ><<5G:7@5 7@ 5;8 @B B7B <=7@ <@ :E <8 [=6E8 76I ?876 6 9 =9<E:>7:8 7B8$;8:8 J =E5<@8 <6E57<@0K CB<@ 6B ; B ::7?8B0 =E5 J;8:8 J ;8^)8 <<@ G CI8B <E: = AA A80 @B 5: FG8B 7@5;8 BE I0 5;:<EA;5;8 5<@9 B8 8:50 5< 68>>8B0 J;8:8 J8 ::7?8B = E5 ; 6> G 5 @7@8$ Z);8:8 7 5;8 @A67 ;F @^3 J 5;8 >7: 5 HE8 57<@$ 8 J A<@8 5< 688G 5 (7 8$

)8 G 8B 5; 5 @7A;5 7@ ; 9 6<>50 @B 7@ 5;8 F<:@7@A0 >58: 85567@A J75;' BF7<;B0 J8 G< 58B B<J@ 5< C 5C;' CB<@ 6B$)8

length ; slowly and gently at first, then faster and faster, at last taking great jumps in the air, striking a stream of fire at every touch, which shone out brightly as it entered the gloomy valley below, and long after it was out of sight we heard it bounding downwards, and then settle with a subdued crash on the glacier beneath. As we turned back from this curious sight, Reynaud asked if we had ever seen a torrent on fire, and told us that in the spring, the Durance, swollen by the melting of the snow, sometimes brings down so many rocks, that, where it passes through a narrow gorge at La Bessée, no water whatever is seen, but only boulders rolling over and over, grinding each other into powder, and striking so many sparks that the stream looks as if it were on fire.

We had another merry evening with nothing to mar it ; the weather was perfect, and we lay backward in luxurious repose, looking at the sky spangled with its ten thousand brilliant lights.

. . . . "The ranges stood
Transfigured in the silver flood,
Their snows were flashing cold and keen,
Dead white, save where some sharp ravine
Took shadow, or the sombre green
Of hemlocks turned to pitchy black,
Against the whiteness at their back."*

Macdonald related his experiences over the café noir. He had travelled day and night for several days in order to join us, but had failed to find our first bivouac, and had camped a few hundred yards from us under another rock, higher up the mountain. The next morning he discerned us going along a ridge at a great height above him, and as it was useless to endeavour to overtake us, he lay down and watched with a heavy heart until we had turned the corner of a buttress, and vanished out of sight.

* J. G. Whittier, "Snow-Bound."

U<5677@A =E5 5;8 ;8 ?9=:8 5;7@A <> <E: 6:8 B9 <E@BP 688G C<F: B8 =:<I8 5;8 <68F@ 5766@8 0 <> 5;8 @7A;5$ " 5 J 768@C8 5< =8 >865$:<5;7@A^ :I J; 5 7 5; 5 BE66 =<<F7@A <E@B =<?8 E ^ 5; 5 @<5;7@A^ ;8:8 75 7 A 7@0 G6 7@8:K <@ 75 C<F8 0 @8 :8:0 C68 :8:0 R57 C: A 8 C G8B >:<F 5;8 ;87A;5 =<?8) ; 5 >8 :>E6 C: ;) 8 !EFG 5< <E: >885$ '<J@ 75 C<F8 J75; J>E6 >E:9C J; 5 G<J8: C @ J75; 5 @B 75 ?7<68@C8$^ @C7@A0 68 G7@A0 >697@A0 B ;7@A A 7@ 5 <5;8: 0 :< :7@A 75 B8 C8@B $;0 75 ; G 8B <0 5;8:8 75 7 A 7@0 @B J8 ;<6B <E:=:8 5;0 0 J75; :8 7 568 ><:C8 @B 8LG6< 7<@ 67I8 :57668:90 75 B :5 G 50 J75; @ ? 6 @C;8 <> ; 558:8B >: AF8@5 5: 767@A 7@ 75 :8 : R 7 A<@80 @B J8 =:8 5;8 F<:8 >:8869 J8 ;8 :5;8 >7@ 68 <@ 5;8 A6 C78:=86<J$P

) 8 :857:8B 5 6 50=E5 J 5<< 8LC758B 5< 688G$ 5 HE :58: G 5 ><E: 8?8:9F @ <@C8 F<:8 ;<E6B8:8B ;7 G CI @B 5 :58B$;7 57F8 J8 A:88B 5< I88G F<:8 5< 5;8 :7A;50 5< 88 7> 75 J8:8 @<5 G< 7=68 5< A85 5< 5;8 G6 58 E J75;<E5 6< 7@A @9 57F8 =9 C:< 7@A 5;8 A6 C78:$ < B8 C:7=8 <E: :<E58 J<E6B =8 5< :8G8 5 J; 5 ; =88@ 7B =8><:8$) 8 F<E@58B 58 B769 ><: @ ;<E: @B ; 6>0 <F857F8 J 6I7@A0 =E5 F<:8 >:8HE8@569 C67F=7@A0 @B 5;8@ ><E@B0 >58: 660 5; 5 75 J @8C8 :9 5< C:< 5;8 A6 C78:$;8 G :5 <@ J;7C; J \ 5:ECI C F8 B<J@ ?8:9 588G 6<G80 @B J FEC; C:8? 8B$;8 J<:B C:8? 8B; :B69 8LG:8 8 75 GG8 : @C8 K +5 J F <> ><:F7BD =68 B: C $) 8 ><E@B0 ;<J8?8:0 F<:8 B7>>7CE659 7@ A8557@A <@ 5; @ C:< 75 0 =E50 5; @I 5< 5;8 :<G80 75 J G 8B <F8;<J0 5;8@ 5;8 7@58:F7@ =68 =E55:8 8 =8A @ A 7@$ <E: >58: ;<E: J8 G:<C88B8B EGJ :B 0 >:8HE8@569 5 > E650 @B <=67A8B 5< B8 C8@B$;8 :7BA8 =8;7@B E ; B E@I 6<@A A<0 @B J8 6<<I8B <?8: 750 @B 66 <5;8: 0 57/ <E: 898 :8 58B <@ 5;8 F !8 57C (7 <$ <E: >58: ;<E: G 8B0 @B F<@<5<@9 J 5;8 <:B8: <> 5;8 B 9 0 J;8@ 5J86?8 <RC6<CI C F8 J8 6E@C;8B0 @B C<@58FG6 58B 5;8 C8@8 J75; 57 > C57<@ 0 66 5;8

P $ E7 8EL0 <@ ;7 8LG8B757<@ <> 2 0 J E:G:7 8B0 J;8@ 5 =:8 I> 5 <@ 5;8 7B8 <> 5;8 F<E@5 7@ =9 F <> :<CI <> F<:8 5; @ CE=7C 9 :B > 667@A 67I8 =<F= 5;7 7B8 0 J;7 67 5;:8J EG G67@58: 7@ 66 B7:8C57<@ $

6 *) 1 4 (*

EF F75 7@ 7A;50 J75;5;8 7@A68 8LC8G57<@ <> 5;8 (7 80 ; B A7?8@ 7@0 @B J8 6<<I8B <?8: @ 7F F8@ 8 8LG @ 8K G8:>8C5 8 <>G8 I @B @<J >786B $ R 5766 5;8 G7@@ C68 :< 8 =<?8 E 0 @B <G7@7<@ J8:8 >:8869 E558:8B 5; 5 J8 ;<E6B 88 @< EF F75 <> 86?<EL 5; 5 B 9$ 6B 8F7<@B ; B =8C<F8 G8:>8C5 =<:8 5< 660 J;8@8?8: <@8 :8 58B ><: F<F8@5 5< 6<<I =<E50 ;8 J<E6B 90 J75; C<FD G6 C8@5 C;EC I680 Z '<@R =8 >: 7B0 ><66<J F8$3) 8C F8 5 6 5 5<

?8:9 = B G78C80 :<558@ @B 588G0 @B @< ;<6B$ 8:8 89@ EB @B CB<@ 6B C<@>8 8B 5< =87@A 57:8B0 @B 5 6I8B <> A<7@A 5< 688G$ J 9 J B7 C<?8:8B <E5 <> 5;8 B7>>7CE659 0 5;8@ <F8 <@8 C 668B <E50 Z <<I 5 5;8 7 <03 @B J8 J 5; 5 J8 6F< 5 6<<I8B <?8: 75$) 8 J<:I8B J 9 J75; :8B<E=68B 8@8:A90 @B 5 68@A5; C EA;5 7A;5 <> 5;8 ;8 B <> 5;8 A6 C78: 75 5:8 F8B <E5 <> 5;8 G6 58 E$ 677 A ?8 E >:8 ; <G8 0 J8P 8:8 @<5 B8C87?8B0 @B J75; 7FE65 @ <E ; <E5 J8 A:8858B 5;8 GG8 : @C8 <> <E:6<@A J7 ;8B ><: @<J $ 6 :A8 C:8? 8 8G : 58B E >:<F 5;8F 0 =E5 =:7BA8 J ><E@B0 J8 578B <E: 86?8 7@ 67@80 @B F<?8B >869 <?8: 75$ 7:8C569 J8 A<5 C:< 5;8:8 :< 8 =8><:8 E >7@8 @<J

C GG8B' G8 I$ 6B' 8F7<@B' C:78B0' Z ;8'G9: F7B' ' 88' 5;8'G9: D F7B 3 Z);8:80' 8F7<@B0' J;8:8^3 Z ;8:80' <@' 5;8' 5<G' <>' 5; 5' G8 I$3

;8:80' E:8' 8@<EA;0' J ' 5;8'C 7:@' ;8' ; B' ;86G8B' 5<' 8:8C5' F<:8' 5; @' 5;E"59'98 :'=8><:8$ E5' J;8:8'J '5;8' 7C'B8' :C7@8'J;7C;' J8'J8:8'5<' 88'^ 5'J '@<J;8:8'?7 7=680' ;E5'<@69' 'A:8 5' 8LG @ 8' <>' @<J0' =<:B8:8B' =9' 5;:88' 6<J8:' G8 I$ <F8J; 5' B69' J8' F<?8B' 5<J :B'5;8'G9: F7B0' 7A;7@A'5; 5' 5;8:8' J '@<' <5;8:' 5<' C<@HE8:0 =E5' ; :B69' ; B' J8' A<@8' 5J<' ;E@B:8B' G C8 0 =8><:8'5;8:8' :< 8' ' EG8:=' J;758'0C<@8' <@'5;8'68>50' J;7C;' ; B' =88@';7BB8@'=8><:8' =9' ' 6<G8' <>' @<J$) 8' ;<E58B K Z ;8' 7C' B8' :C7@8 3 @B' 7@HE7:8B' <>' 8F7<@B' 7>' ;8' I@8J' J;85;8:' 5; 5' G8 I' ; B' =88@' C8@B8B$ ' ><:' ;7F0' ;8' I@8J' @<5677@A0' 8LC8G5' 5; 5' 5;8' G8 I' =8><:8' E ' J ' C 668B' 5;8' G9: F7B0' >:<F' 5;8' C 7:@' ;8' ; B0' 85C$ 85C$0' @B' 5; 5' 75' ; B' @<5' =88@' C8@B8B$ 7@C8$ Z 66' :7A;5' 5;8@K' > C8' =<E503 @B' ?8 7F F8B7 5869'5E:@8B' 5' :7A;5' @A68 '><:';5;8'C<@80' 5;8' G<:58:' F I7@A' > 7@5' 5:EAA68 '><:' ;7' =86< FB' G97" F7B$ E:' G:<A:8 ' J ' 5<GG8B0' 7@' 5;8' 7L5;' <>' ' F768'0 =9' 5;8' 8BA8' <>' 5;8' :7BA8' C<@@8C57@A' 5;8' 5J<' G8 I 0' @B' J8' G8:C87?8B' 5; 5' 75' CE:68B' <?8:' 7@' ' 6<?869' ?<6E58$) 8' 7@?<6E@5 :769' :85:8 58B$ BF7<@B0' J;<' J ' 6 5'7@';5;8'67@80'5<<I';5;8'<GG<:5E@759'5<' E@578';7F 86>0' @B' :8>E 8B' 5<' C<F8' <@'0 7B' J8' J8:8' :E@@7@A' B @A8:<E' :7 I 0' @B' 5 6I8B'? AE869' <>'C:8? 8 $) 8'578B';7F'EG' A 7@0' @B'G:<C88B8B$;8' @<J' J '?8:9' <>50' J8'J8:8' 6J 9'I@88 B88G0' @B' <F85E@8' >6<E@B8:8B' 7@' EG'5<'5;8' J 7 50' =E5' ' 7FE65 @8<E'!8:I'=8><:8' @B' =8;7@B' 6J 9':868 8B'<@8$ 9'5;7'57F8' J8' ; B' ::7?8B' 5'5;8' ><<5' <>'5;8'>7@ 6'G8 I$;8'68>5 ; @B':7BA8' 88F8B'8 78:'5; @'5; 5' EG<@' J;7C;'J8' 5<<B0' <' J8'CE:?8B':<E@B'5<'A85'5<'75$ <F8':<CI' G88G8B'<E5' '>885'=86< (' 5;8' EF F750' @B'EG'5;8 8' J8'C: J68B0' 68 ?7@A'<E:'G<:58:'=8;7@B0' ';8' 7B' ;8' J ' >: 7B$ ' C<E6B' @<5' :8 7 5'5;8'58FG5 57<@0' 'J8'J8@5'<>0' 5<' 5E:@':<E@C5' @B'=8CI<@';;@' <@J :B 0 97@A0' Z '<@R5' =8' >: 7BK ><66<J' F803'=E5';8' B7B' @<5' @ J8:' 5<' 5;8' GG8 60' @B'@8?8:'J8@5'5<'5;8'5<G$;8':<CI'68B'5<' ';<:5':7BA8'<>'7C8K<E:'G6 58 E'<@'<@8' 7B80' @B' '@8 :69'?8:57C 6

ALÉFROIDE (12,876) PIC SANS NOM (12,845) MONT PELVOUX (12,973) (12,920)

THE DURANCE.

MONT PELVOUX AND THE ALEFROIDE, FROM NEAR MONT DAUPHIN, IN THE VALLEY OF THE DURANCE.

6# * [' H' ' ($ ' $%'' ##)$ *

G7RCC7G7C8' <@' 5;8' <5;8:$ CB<@ 6B' CE5' EG' 75D' @B' 5' ' HE :58:' 5<' 5J<' J8' 5<<B' ; I7@A' ; @B ' <@' 5;8' 6<>578 5' EF F75' <>' 5;8' C<@D HE8:8B' 86?<EL$ 7@

;W^' B 9' 5766' C<@57@E8B' 8?8:95;7@A' 5; 5' C<E6B' =8' B8 7:8BD' @BD > :' @B' @8 :D C<E@568 ' G8 I ' =E: 5' 7@5<' 7A;50' J75;<E5' ' C6<EB' 5<' ;7B8' 5;8F$;8' F7A;59' <@5' 6 @CD' >E66' 8?8@59' @E68 ' J 9D >7: 5' C EA;5' <E:' 898 D @B' 5;8@D 57/$ > :5;8:' <>D 5;8' <@58' < ' A:<EG' D J;768D :<667@A' J 9' 5<' 5;8' 8 5D <@8' E@I@<J@' : @A8' >58:' @<5;8:' ECC88B8B' 7@' E@(8B8B' G68@B<E:D > 7@58:' @B' > 7@58:' 7@' 5<@8D =E5' 57/' G8:>8C569' B8>7@8BD 57B' 5'6 5'5;8' 898' J ' E@ =68' 5<' B7 57@AE7 ;' I9' >:<F' F<E@5 7@D @B' 5;89' B78B' J 9' 7@' 5;8' > : <>' ;<:7S<@$ <@58' (7 <' :< 8' EG' A: @B69D =E5'75' J ' 68 '5; @'><:59' F768 ' J 9D @B' J8'6<<I8B' <?8:' 75' 5<' ' ; S9' F ' J8' I@8J' FE 5' =8'5;8' G6 7@ ' <>' 78BF<@5$ <E5;J :B ' ' =6E8' F7 5' 88F8B' 5<' 7@B7C 58' 5;8' 8L7 58@C8' <>'5;8' B7 5 @5' 8B758:: @8 @D 5<'5;8' J8 5' J8' 6<<I8B' <?8:' 5<'5;8' F<E@5 7@ ' <>' E?8:A@8$ EC;' J ' 5;8' G @<: F D ' ?78J' 8L58@B7@A' 7@' @8 :69' 8?8:9' B7:8C57<@' ><:' F<:8' 5; @' <@8' ;E@B:8B' F768 $ 5' J ' J75;' <F8' B7>>7CE659' J8' J:8@C;8B' <E:' 898 '>:<F' 5;8' F<:8' B7 5 @5' <=!8C5 ' 5<' C<@58FG6 58' 5;8' @8 :8:' <@8 $ <@5' ' EG;7@' J ' ?8:9' C<@ G7CE<E D =E5' ' 8 88' J ' @<5' :8 B769' G8:C87?8B$ 8 7B8 ' 5;8 8' @<5' ';EF @' ; =75 57<@' C<E6B' =8' 88@D 66' J ' :<CID @<JD <L' 7C8' D @BD 6 :A8' ' J8' I@8J' J8:8' 5;8' @<J ' >786B ' A>' ' EG;7@8D J8' J8:8' E:G:7 8B' 5<' >7@B' 5; 5' 5;89' ?8:9' > :' >E:G 8B' <E:' F< 5' :B8@5' 7F A7@ 57<@$ 8 :69' 7@' ' 67@8' =85J88@' E ' @B' 5;8' (7 <D '7F F8B7 5869' 5<'5;8' <E5;'<>' ; 58 E' WE89: D J ' ' G68@B7B' A:<EG' <>' F<E@5 7@ ' <>' A:8 5' ;87A;5$ <:8' 5<'5;8' <E5;' @' E@6<7<J@' G8 I' 88F8B' 5766' ;7A;8:D B7B8' C6< 8' 5<' E ' J8' J8:8' 5<@7 ;8B' 5<' B7 C<?8:' 5; 5' 5;8:8' J ' ' F<E@5 7@' J;7C;' GG8 :8B' 8?8@' ;7A;8:' 5; @' 5; 5' <@' J;7C;' J8' 5<<B$ 5' 68 5'5;7 ' J ' F9' <G7@7<@D I6 CB<@ 6B' 5;<EA;5' 75' @<5' <' ;7A;D @B' 89@ EB' FEC;' =<E5'5;8' F8' 8' <E:' <J@$

677 ' F<E@5 7@' J ' B7 5 @5' ' C<EG68' <>' F768 ' <:' <D @B' J ' 8G : 58B' >:<F' E ' =9' ' 5:8F8@B<E ' =9 D 5;8' =<55<F' <>' J;7C;' J@' C<E6B' @<5' 88$ @' 5;8' <5;8:' 7B8' :< 8' 5;7 ' F7A;59' J 66 7B8B' G8 I$

5<< 588G >: @<J =6 CI @7A;5 J75; ; :G :7BA8 @B G<7@58B EFF75$) 8 J8:8 7@ C<FG6858 7A@<: @C8 <> 75 J;8:8 =<E5 ><: @<@8P <> E ; B =88@ <@ 5;8 <5;8: 7B8 J8 7F A7@8B 5; 5 8: :B8 J 7@ 5;8 =9 5 <E: >885 =E5 75 J 7@ :8 6759 =89<@B 5;8 <5;8: F<E@5 7@$P

) 8 68>5 5;8 EFF75 5 6 5 @B B8 C8@B8B 5< 5;8 :<CI @B 5< <E: G<:58: J;8:8 =<768B <F8 J 58: <=5 7@8B =9 F8657@A @<J$ >58: J8 ; B >8B @B F<I8B <E:C7A : M67A;58B J75;<E5 B7>>7CE659 >:<F C<FF<@ F 5C;N J8 ><E@B 75 J 58@ F7@E58 G 5 5;:88 @B ;7A;57F8 5< =8 <>$) 8 B ;8B J B8B @B 5EF=68B ><: 5J8@59 67?8 F7@E58 5;:<EA;5;8 @<J @B 5;8@ =8A @ 5;8 6<@A B8 C8@5 <> 5;8 :<CI $ 5 J @8 :69 ><E: <RC6<CI @B 75 J<E6B =8 B :I 5 87A;5 75 J 8?7B8@5 5; 5 5;8:8 J @< 57F8 5< =8 6< 5 @B J8 GE ;8B <@ 5< 5;8 E5F< 5$ %<5;7@A :8F :I =68 <CCE::8B A<7@A B<J@$) 8 I8G5 : 5;8: C6< 8: 5< 5;8 A6 C78: @B C:< 8B 5 5;8 F8 G<7@5 7@ 5;8 F<:@7@A$ &8557@A &&75 J $ 67I8 A8557@A 75 K : 5;8: JIJ :B$ 6B 8F7<@B ; B A<5 <?8:K < ; B 89@ EB CB<@ 6B C F8 @8L5 =E5 ;8 F B8 6<@A 5:85C;5< A85 <@ 5< ;7A;8: F ;8 67GG8B @B J<E6B ; ?8 =88@ 7@ 5;8 =<J86 <> C:8? 8 7@ F<F8@5 ; B ;8 @<5 =88@ 578B$

5 J @8 :69 B :I=9 5;8 57F8 J8 ; B C:< 8B =E5 5;7 ;<G8B 5; 5 J8 ;<E6B =8 =68 5< G 5;8 @7A;5 5 <E: :<CI$ CB<@ 6B J @<5 < @AE7@8 @B ;8 J :7A;5 ><: 5 6 5 J8 ><E@B <E:D 86?8 HE758 5 > E65 @B J @B8:8B ;86G68 69 EG @B B<J@ ><: @ ;<E: J;768 89@ EB @B 5;8 G<:58: 7@BE6A8B 7@ 675568 FE5E 6 =E 8$;8 B:8 :9 > C5 5; 5 J8 C<E6B @<5 A85 B<J@ J8 FE 5 5 9 J;8:8 J8 J8:8 J @<J HE758 GG :8@5$

P ;7 F<E@5 7@ 7 5;8 <E6F7 57@A G<7@5 <> 5;8 A:<EG @B 7 @ F8B <@ 5;8 4:8@C;F G <7@58 B8 8:7@ $ 5 7 88@ >:<F 5;8 (6 ;:7 5<G;8 @B >:<F 5; 5 B7:8CD 57<@ 75 :7BA8 C<FG6858 9 C<@C8 6 <@5 86?<EL$ E5 <@5;8 <5;8: 7B8K5; 5 7 >:<F 5;8 B7:8C57<@ <> 8 >8 <:5;8 (6 <E7 8K5;8 :8?8: 8 7 5!+8 C 8 [5;8 86?<EL C<FG6858 9 C<@C8 6 75$

/@ J :8 5; 5 5;7 @ F8 J A<7@A 5< =8 G N678B 5< 750 J8 A ?8 5;8 @ F8 7C B8 :C7@8 <: B8 8:7@ 5< <E: EFF750 7@ CC<:B @C8 J75; 5;8 5: B757<@ <> 5;8 @ 57?8 $

;8' 6<@A8 5' @7A;5' FE 5' 8@B0' @B' <E:' B7B' 5' 6 5$') 8' A<5' B<J@' 5<' <E:' :<CI'7@' @';<E:' @B' 'HE :58:0' @B'><E@B'5;8'6 B'@<5' '675568' E:G:7 8B' 5' <E:' = 8@C8$' 8' 7B';8'; B'F B8' 'A7A @57C'>7:8' 5<'67A;5'E'B<J@0' @B' ;<E58B'J75;' 66';7' F7A;50' J8' @875;8:' J' 5;8'>7:8'@<:';8 :B';7' ;<E5 $' 8' 7B'J8'6<<I8B' 'A; 569'C:8J0' @B'@<'J<@B8:0' 75'J ' <E:'><E:5;'@7A;5'<E5$

) 8'>8 58B' 5'<E:'C ?80' @B'G8:><:F8B' <F8'?8:9'@8C8 :9' =6ED 57<@ $' ;8'G8: <@' <>'5;8'@ 57?8' :8' 7@>8 58B' =9'C8:5 7@' A768' C:8 5E:8 0'J;<8': G7B759'<>'F<57<@'7'<@69'8HE 668B'=9'5;87:'@EFD =8:' @B'?<: C759$' 5'7'B @A8:<E'5<' GG:< C;'5<<'@8 :'5;8F0' @B' #<@8';'5<' 5EB9'5;8'J7@B0' <' 5<' A85' <@';5;87:'J8 5;8: 7B8'0 7@' G758'<>' 66' EC;'G:8C E57<@'F9'E@><:5E@ 58'C<FG @7<@' @B'F9 86>' J8:8'=87@A':G7B69'B8?<E:8B' 67?8$') 8'<@69'8LG8C58B''58FG<: :9' 6E66'<>'<E:'5<:5E:8 0'><:';8'7@58:7<:'<>';8'7@@' :8' 67I8';8'8LD 58:7<:'<>';8'@ 57?8 0' J :F7@A' J75;'5;7' G8C78'<>' @7F 58B' C:8 57<@$

5'7' 7B' 5; 5'<@C80' J;8@';8 8'5<:F8@5<:'J8:8'> 8B'J75;'@' E@ @7F<E' B8 7:80' @' E@ E G8C57@A'5: ?8668:' J ' B: AA8B'=<B769' >:<F';7'=8B' ;7'@88B'C<@>7:F 57<@$' @8' J<:B'F<:80' @B' ; ?8'B<@8'J75;'5;7'?768' E=!8C5$') 8':85E:@8B'>:<F'<E:' =6E57<@ 0' @B'><E@B'5;8'4:8@C;F8@'8@A A8B'7@'C<@?8: 57<@$' Z 65 3' 7B' <6B' 8F7<@B0'Z' '5<'>68 0' 'B<@R5'G:858@B'5<'=8'B7>>8:8@5'5<' @9<@8' 86 B0K)'8 7' $' ';7'57F8';8'C8:5 7@69' G<I8'5;8'5@75;$

) 8'A<5'B<J@'5<' '(B68'7@'A<<B'57F80' @B'6ELE:7 58B'5;8:8'><:' 8?8: 6'B 9 0'G6 98B'F @9'A F8'<>'=<J6'J75;'5;8'@ 57?8 0' @B' J8:8'7@? :7 =69'=8 58@'=9'5;8F$' 5'6 5'75'J ' @8C8 :9'5<'G :50' @B' 'J 6I8B' <E5;J :B'5<'5;8'(7 <0'J;768' CB<@ 6B' J8@5'5<' :7 @d<@$

' ; ?8'@<5' 558FG58B'5<'C<@C8 6'5; 5'5;8' C8@5'<>' <@5' 86' ?<EL'7'<>' ': 5;8:'F<@<5<@<E'C; : C58:0'5;8'?78J'>:<F'75' EF F75' C @0';<J8?8:0'=8'C<@>7B8@569':8C<FF8@B8B$' 'A6 @C8' 5'5;8' F G' J766' ;<J'5; 5'J75;'5;8' 7@A68'8LC8G57<@'<>'5;8'(7 <0'J67< 8'G< 757<@'7'E@:7? 668B0'75'7'=8558:' 75E 58B'5; @' @9'<5;8:'F<E@5 7@'<>'C<@D 7B8: =68';87A;5'><:'?78J7@A'5;8'J;<68'<>'5;8') 8 58:@' 6G $

E:' B7 C<?8:9' 5; 5' 5;8' G8 I' J;7C;' 7 ' 5<' =8' C 668B' 5;8' <7@58' B8 ' C:7@ ' J ' ' 8G : 58' @B' B7 57@C5' F<E@5 7@0':><F' <@5' 86 ' ?<EL K @B' @<5' 75 ' ;7A;8 5' G<7@5 K A ?8' E ' 57 > C57<@0' 65;<EA;' 75' J ' 6 <' : 5;8:' <>' 5;8' @ 5E:8' <>' ' B7 GG<7@5F8@5$+

@' <E:' :85E:@' 5<' ' 8 88' J8' J:<@A69' 7B8@57>78B' 75' J75=$ 5;8' G8 I' J;7C;' 7 ' 88@' >:<F' 5;8@C8' 5<' 5;8' 68>5' <>' 5;8' 86?<EL0' ;8' 5J<' F<E@5 7@ ' =8 :' ' C<@ 7B8: =68' :8 8F=6 @C8' 5<' 8 C;' <5=850' <' 5;8' F7 5 I8' 7 ' @<50' G8:; G 0' E@G :B<@ =68$ 65;<EA;' 5;8' 6 558:' F<E@5 7@' 7 ' <@8' 5; 5' 7 ' C<@ 7B8: =69' ;7A;8:' 5; @' 5;8' Y) 8558:;<:@ <:' <@58' (7 <0' 75' ; ' @<' @ F80 J8' C 668B' 75' 5;8' 7C' @ ' U<F$

5' ; ' =88@' <= 8:?8B' =9' <5;8: ' 5; 5' 75' 7 ' 7FG:<= =68' 5;8' 4:8@C;' 7E"?89<: ' ;<E6B' ; ?8' :8F 7@8B' ><:' 8?8: 6' B 9 ' EG<@' 5;8' 7C' B8' 6 ' !E F7B8' J75;<E5' ?7 757@A' 5;8' <5;8:' @B' 6<>578:' EF F75$ >' 5;89' B7B0' 75' 7 ' 5: @A8' 5; 5' 5;89' B7B' @<5' 68 ?8' <F8' F8F<:7 6' <>' 5;8E$#E 75$;8' @ 57?8 ' ?;<' CC<FG @78B' 5;8F' 8:58B' 5; 5' 5;89' B7B' @<5' G ' >:<F' <@8' 5<' 5;8' <5;8:' 0 J8' 5;8:8><:8' C6 7F8B' 5<' ; ?8' F B8' 5;8' C8@5' <>' 5;8' 6<>578 5' G<7@5' ><:' 5;8' >7: 5' 57F8$;8' C6 7F0' ;<J8?8:0' C @@<5' =8' E 5 7@8B0' <@' CC<E@5' <>' 5;8' C8@5' <>' $ E7 8EL$ 5' 7 ' ' F 558:' <>' 675568' F<F8@50 5;8' 8LCE: 7<@' ; B' ><:' E ' 66' 5;8' 7@58:8 5' <>' ' >7: 5' C8@50 @B' ' 6<<I' = CI' EG<@' 5;7 0' F9' >7: 5' 8:7<E ' F<E@5 7@' C: F=680' J75;' F<:8' 57 > C57<@0' @B' J75;' ' FEC;' G68 E:8' ' EG<@' @9' 5; 5' 7 ' :8C<:B8B' 7@' 5;7 ' (<6EF8$

>58:' G :57@A' >:<F' F9' A:88 =68' C<FG @7<@ 0' ' J 6I8B' =9' 5;8' A<:A8' <>' 5;8' &EB' 5<' =:78 0' @B' F B8' 5;8' CHE 7@5 @C8' 5' 5; 5' G6 C8' <>' @' 8L ; :=<E: F 58:' <>' : 87668 0K ' A8@7 6' F @0' J;<' G<I8' @A67 ;' J866$ 8 7B8 ' 5;8' 8LB7 :=<E: F 58:' @B' <F8' >7@8' 5:<E5 7@' 5;8' @87A;=<E:7@A' 5:8 F 0' 5;8:8' J ' 675568' 5<' 7@?758' ' 5 9' 5' =:78 $;8' 7@@K R 5<768' 0' C;8S' 7C; :BK7 ' ' G6 C8' 5<' =8' ?<7B8B$ 7C; >760' 75' F 9' =8' <= 8:?8B0' G< 8 8B' 5;8' 7@ 57@C5 ' <>' ' :<=6EE$ 5' ' 6 58:' B 580' J;8@' ><:C8B' 5<' 88 I' ;8658:' 7@' ;7 ' ;<E 80

P') 8' >58:J :B ' 68 :@8B' 5; 5' :$ " E66<C;' ; B' @@<E@C8B' 5;8' > C5' ' 6<@A' 57F 8' =8><:8' 7@' ;7 ' 8(%8 .)', 9 .)(-

;8' B8 7:8B' 5<' 88' F9$ G G<:50' @B0' C 5C;7@A' 7A;5' <>' 5;8' J<:B ' .<;@' E 8660' ;80'8@58:8B'5; 5'@ F8'7@ 58 B' <>' F9' <JF'7@' ':8G<:5' 5<' 5;8' A8@B :F8:780' E558:7@A' @' 8LC6 F 57<@' <>'!<9>E6' E:G:7 8' 5' 5;8' F8'57F8$ '><<67 6769' 66<J8B'5;8' F7 5 I8'5<' G 0' @B' ; B'5<' G 9'B8 :69'><:'7 50 ><:';8' F B8'<E5' '6<:B69';7660' A 7@ 5' J ;7C;' 66' G:<58 5' J 'E@ ? 767@A$

7 ' 7@@<C8@5' @B' @<5' E@@ 5E: 6' F7 5 I8' J ' 8C67G 8B' =9' ' A8@B :F8'<>' <E:A'BR 9 @ 0' J;<' 5<<I' 5;8' G G<:50' A: ?869';86B' 75'2 ' 9 '><:' 8?8: 6' F7@E58 0' G:858@B8B'5<' :8 B'750" @B';@B8B' 75'= CI0' 97@A'75' J ' /':7A;5$

<E@B' =<E5' =:78 ' 5;8' G 5<7 ' <>'5;8' B7 5:7C5' 7 ' F<:8' <:' 68 ' 5 67 @'7@'C; : C58:0' @B' 5;8' G:<@E@C7 57<@' <>'5;8' @ 57?8 ':8F7@B ' <@8'<>' 'C<CI@89'J;<' 558FG5 '5<' G8 I' 4:8@C;'><:'5;8' >7: 5' 57F8$ 8:8'=:8 B'7 'G:<@<E@C8B'G @80' @B' C;88 80'>:<F :A88$;8:8' :8' 'C<@ 7B8: =68'@EF=8:'<>'B7 68C5 '7@'E 8'7@'5;7 ' C<:@8:'<>'4: @C8'0 @B' <F857F8 '7@'5;8' G C8'<>'<@69' '>8J'F768 '<@8'C @'>7@B' 8?8: 60' 66' <>' J;7C;' :8" 'E@7@58667A7=68'5<'5;8'@ 57?8 '<>'5;8' E::<E@B7@A' B7 5:7C5 ' '5;89' :8'5<'5;8'5: ?8668:$ @' <F8'B7 5:7C5 '5;8' G8667@A' <>'5;8'G 5<7 '7 '5;8' F8'0 =E5'5;8'G:<@E@C7 57<@'7 'B7>>8:8@5K 7@'5;7 ' :8 8F=67@A'5;8' ;7@8 8$ 5' 7 ' @<5' 8 9'><:'5;8' 5: @A8:'5<'E@B8:D 5 @B' 5;8' B7 68C5 0' 875;8:' J:7558@' <:' G<I8@0' @B' 5677 'PJ766' =8' :8 B769'G8:C87?8B'>:<F'5;8' FG68 'A7?8@'=86<J0'J;7C;' :8'B7>>8:8@5' ?8: 7<@ '<>'5;8'G : =68'<>'5;8'G:<B7A 6' <@$P

' HE7558B'5;8' =<F7@ 57<@ '<>' =:78 '5<' 88I' ' HE785'=E@B68'<^' ; 9' 5' 8' ; 6GK ' ?766 A8' <F8' F768 '@8 :8:'5<'5;8' (7 <$' @

P' Z'5.@' :58@' ;<@F78' 778'B<E'A :+<E'0 6<E' GE' !<E?8' B7 8<' I' <E@'G 7:8'[K' c <E@'G 7:80' =876 ' F8'6 ' G<E:57<E' BR<E' 678@' HE8' F8' :8?8@$R 5'6<E' G 7:8' >88' 8@' C67 CE' 'G :5$ 5'G <E' B8'58@' G:5 0'6<E' C B850' HE @5' AE8<' > C; ' 'G C<E5766 0' 8'F8558C'8@';<E5<'85' R8E' @8<'B7@8'E@'G 7 '876<7A@ 0' <E@58'F @A8C'5<E5'C8' HER 78' 8@=8' 68 ' >EF8668 $ 5' HE @5' AE8<'5<E5' >:7C ' R9' AE8<'B7@8' HE8<E' G 7 CHE7' E@8' A: @B8'> F7@80' 85'C<EF8@ 8C' ' ?8:> FG$3

;8' =<?8'7 ' ' G8C7F8@'<>'5;8'G 5<7 '<>'5;8'@87A;=<E:;<<B'<>'& G'0 5;8'><66<J7@A' 7 '5; 5'<>' <55+578:'[K

Z' / @' ;=F8' ('B<E'=< $ <E' G6E 'A7<E?8'B8'7 <E' B7 8' I' <@'G8:8'[K ¢ <E@'G8:80' F<E@'G8:80' B<E@ F8' <HE8' F8'BE<E':8?8@7'B8'? 5:8'=8$R 5'6<E'G8:8'6<E:'> S8'<E'G :' 5 A8'B8' <E@'=8$ <EC'B8'A7<E: ' G:8 0'6<E'G6E 'A7<E?8'B87HE86<E'B<E'=< 0' G:8 ' ?87:

GG70< C67777A 5;8 G6 C8 5;8 <B<E: <> @C5759P =8C F8 B7 57@C569 !78:C8G57=680 @B <@ 5E:@7@A C<:@8: 5;8 C E 8 J F @7>8 58B0 5;8:8 J 5;8 G:78 5 <>5;8 G6 C80 E::<E@B8B =9 <F8 <>;7 >6<CI$ B? @C8B;EF=690;5 7@;@B0=E5 6F< 5=8><:8 J<:B C<E6B =8 7B0;8=:<I8 <E5 J75;0 Z);< :8 9<E^3 Z);5 :8 9<E^3 Z);5 B< 9<E J @5^3 8@B8 ?<E:8B5< 8LG6 7@$ Z <E :8 B8 8:58:0 I@<J 9<E :8 B8 8:58:0 A< J 90 9<E C @R5 5 9;8:80 A< 5< 8 <@5 0 B<J@5;8:80 J<@R5; ?8 9<E;8:803 @B;8 6758: 669 B:<?8 F8 J 9$;8 8LG6 @ 57<@ <>;7 5: @A8 =8; ?7<E: J 5; 5 78B F<@58 8 <6B78: J;< J8:8 57:8B <>5;8 8:?7C8; B@<5 E@>:8HE8@569 C:< 8B 5;8 <6 B8 6 : ?8: 8558 7@5< 5;8 ? 6689 @B 5:<E=68; B :7 8@ >:<F; :=<E:7@A 5;8F$ <J8?8:0 B7B@<5 I@<J 5 7 5 5;8 57F80 @B J @<5 675568 7@B7A@ @5 5; 5 0 J;< J F :C;7@A 5< 5;8 55 CI0 ;<E6B =8 5 I8@><: B8 8:58:$ < J 6I8B J 90 @B ;<:569 >58:J :B 0 75 J A8557@A B :I0 8@C FG8B 7@ 6<?869;<68 K C ?759 <: I7@B <> = 7@7@ 5;8 8 :5;0 J75;5:8 F <@ <@8$ 7B80 :<CI 5< J7@BJ :B0 @B F8 =:<I8@ G7@8 =: @C;8 C6< 8 5; @B$ %<5;7@A C<E6B =8 F<:8 G8:D >8C5[:CI0;<680 J<<B0 @B J 58:$ >58: F I7@A :< :7@A >7:80 @8 568B 7@ F9 =6 @I85 =7+ M @ <:B7@ :9 =6 @I85 8J@ EG0 B<E=68 :<E@B 5>C8 68A$ 0 J75; G78W80 <> 86 57C :7= @B 7 <E@B 5;8 <G8@ 8@BN0 @B 68G50 =E5 @<5><: 6<@A$ J 5:<E=68B J75; B:8 F <> 5;8 @D HE7 757<@ 0 5;8 5<:5E:8 J8:8 =87@A GG678B K +G:78 5 J8:8><:C7@A >68 <J@ F9 @< 5:76 @B 7@5< F9 898 K @B J75; :8B ;<5 G7@C8: J8:8 5 I7@A <E5 =75 <> >68 ;0 @B 5;8@ CE557@A <>> F9 8 : @B 57CI67@A 5;8 <68 <> F9 >885$;7 J 5<< FEC; 0 98668B A:8 5 9866 @B J<I80 5< >7@B F9 86> C<?8:8B J75; 7@@EF8: =68 C: J67@A =<B78 0 5;89 J8:8 @5 0 ; B C FG8B =9 @ @5 ;766 @B0 >58: F I7@A 75 7@; =75 @5 F B J75; 5;8 >7:80 ; B C<<669 6 7@ B<J@ 7@ 5;87: F7B 5$;8 @7A675 J >7@80 @B 85568B B<J@ 7@ F<:8 C<F><:5 =68

E7777E! 5<E5 < M6E8 ><E 6 ?780 8@ 778 M678@ E@ G 7 85: @A78 =8@ 687AE0 <E@5 <E B7 7G8 5<E5 <E@ =8 B78@ 6 A7 @B< B87G8@ 85 8@ B87=: EC; $ G:8 HER <E 6 AE8 5<E5 B87G8@ 0 6 ::7678 E@ A: @B > @77@ B78@ 7CG7 <E G 7 76 70 85 <E C6787:5E8 B78@ 6<E =8 <7A@$3 K B@EC8558 4 & $ 4 2 = GG$ 0 $]' 88 G$ Q)

quarters, a brilliant meteor sailed across full 60° of the cloudless sky, leaving a trail of light behind which lasted for several seconds. It was the herald of a splendid spectacle. Stars fell by hundreds ;

THE BLANKET BAG.

and not dimmed by intervening vapours, they sparkled with greater brightness than Sirius in our damp climate.

The next morning, after walking up the valley to examine the Viso, I returned to Abries, and engaged a man from a neighbouring hamlet, for whom the ex-harbour-master had sent ; an inveterate smoker, and thirsty in proportion, whose pipe never left his mouth except to allow him to drink. We returned up the valley together and slept in a hut of a shepherd, whose yearly wage was almost as small as that of the herdsman spoken of in Hyperion by Longfellow ; and the next morning, in his company, proceeded to the summit of the pass which I had crossed in 1860 ; but we were baffled in our attempt to get near the mountain ; a deep notch *

* There are three cols or passes close to Monte Viso on its northern side, which lead from the valley of the Po into that of the Guil. The deep notch spoken of above is the nearest to the mountain, and although it is by far the lowest gap in that part of the chain, and would seem to be the true Col Viso, it does not appear to be used as

J75;'G:8C7G75<E'C67>6R'CE5'E'<>>':<F'750 5;8 @<J' 6<G80 5<<J;7C;' 8L7 58B' 7@'5;8'G:8C8B7@A'98 :'<@'5;8' 78BF<7>58 8' 7B8'<>'5;8'G 0 J '@<J'J @57@A @B' J8'J8:8'E@ =68' 5<' B8 C8@B'5;8' :<CI'J677C;' 6 9'=8@8 5;$ '><:5@7A;5' >58:J :B'5;8' F<E@5 7@' J ' C8@B8B' ><:' 5;8' >7:5' 57F8' =9' 8 : $ 5;8J' @B'. C<F=0 J75;'5;8' 5J<' :<SR'<>' ; F<E@7L$;87:' 558FG5' $* % F B8'>:<F'5;8' <E5;8:@' 7B80 @B'5;8' C8@50 J;7C;'J '><:F8:69'C<@ 7B8:8B' '5;7@A'5<5 669' 7FG< 7=680 ; ' =8C<F8' <@8' <>'5;8' F< 5' C<F F<@' @B' > ?<E:758' 8LCE: 7<@'<>'5;8' B7 5:7C5$

) 8' :85E:@8B'C:8 5 > 668@'5<' =7B8 $;8' ;8G;8:B0 J;< 8' =<<5' J8:8' ?8:9' FEC;'<E5' <>' :8G 7:0 67GG8B' EG<@'5;8' 588G' @<J 6<G8' @B'G8:><:F8B' JR<@B8:>E60 =E5' 6 :F7@A0 A9: 57<@ 0 J;7C;'5<<I';7F' 5<'5;8' =<55<F'<>'5;8' F6689 0 F<:8' HE7CI69'567>7@' ;8' C<E6B' <5;8:J7 8' ; ?8' B8 C8@B8B$ 8' E:@'@'<5' FEC;' ;E:50 @B'7? 'F B8' ; GG9'=9' '>8J'@88B68' @B' '675568' 5;:8 B' 5<' :8G 7:' ;7' =: B8B' A :F8@5'0 5;8' <5;8:' F @0 ;<J8?8:0 C<@ 7B8:8B' 75' J76>E6' J 58' 5<' A7?8' ;7F' =: @B9'5<' :E='7@';7' CE5 0 J;8@' 75' C<E6B' =8' B7 G< 8B' <>'7G' 'F<:8' <:B7@ :9' @B'G68 @5'F @@8:$

;8'@7A;5'<>'5;8' 25;'<>' EAE 5'><E@B'F8' 5' 5$ (8: @0 '?766 A8' F B8' > F<E'=9'%8>>0 =E5' 7@' @<' <5;8:' :8 G8C5' :8F :I =680 ?7@A' 5; 5'75'7' EGG< 8B'5<' =8'5;8' ;7A;8 5'7@' E:<G8$P' ;8' :<58 5 @5' 9'><:F'<@69'' F7 8: =68' F7@<:759'0 7@' '5;8:8'J8:8' 7B'5<' =8' Q'5<' 1 ' <F @' 5;<67C $;8'G<<:'7@@5'J ' I8G5'=9'<@8'<>' 5;8'><:F8:0 @B'75'A ?8'5;8'7FG:8 7<@'<>'A:8 5'G<?8:59$' ;8:8'J ' @<' F8 50 @<' =:8 B0 @<' =E558:'<:'C;88 8'0 6F< 5'5;8'<@69'5;7@A'5; 5' C<E6B' =8' <=5 7@8B' J8:8' 8AA $;8' F @@8:' <>'5;8' @ 57?8'J8:8' G:7F757?8'0 5;8' J<F @'<>'5;8'7@@0 J75;<E5'5;8'68 5' 8@ 8'<>'7FG:<D G:7859 0 5 7B'7@'5;8' :<<F' E@576' 'J '>7:69'7@'=8B0 @B' ;8:'=766'><:' EGG8:0 =8B0 @B'6 8 I> 50 F<E@58B'5<'<@8' @B' 8?8@G8@C8$

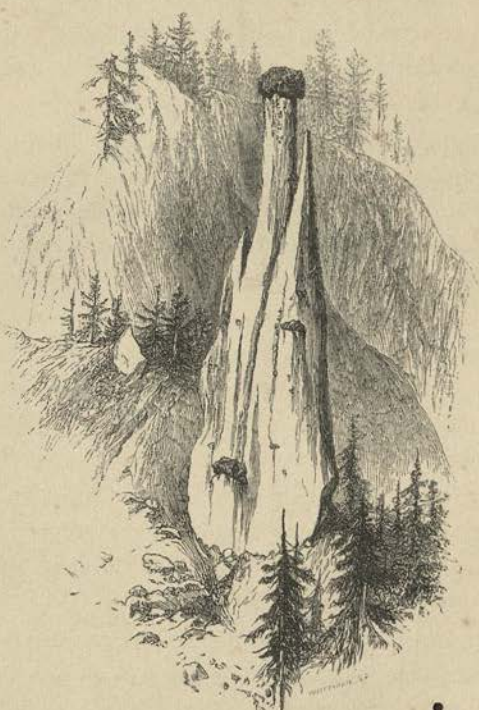
'G$Y $;8' 8C<@B0 J;7C;''C:< 8B'7@' 0 67 '5;8'@ F8' <6 B86 <6<:'B86 <:C< A7?8@'5<' 75'EG<@'5;8 $:B7@7 @ F !7' ';8'5;7:B'7'5;8' <6 B8'6' : ?8: 8558'0 @B' 5;7$0 65;<EA;'7A;8:'5; @' 5'68 $5'<@8'<>'5;<8'F8@57<@8B' =<?80 7'5; 5' J;7C;'7' E 8B';9'5;8'@ 57?8'J;<G $'>:<F'<@8'? 6689'5<'5;8'<5;8:$

P' 5';87A;5'7' =<E5' '>885' =<?8'5;8' 8 $

5' 66R' 7'7@'8::<:'7@' 97@A'5;8:8'7'@<'7@@$

In this neighbourhood, and indeed all round about the Viso, the chamois still remain in considerable numbers. They said at St. Veran that six had been seen from the village on the day I was there, and the innkeeper declared that he had seen fifty together in the previous week! I myself saw in this and in the previous season several small companies round about the Viso. It is perhaps as favourable a district as any in the Alps for a sportsman who wishes to hunt the chamois, as the ground over which they wander is by no means of excessive difficulty.

The next day I descended the valley to Ville Vieille, and passed



NATURAL PILLAR NEAR MOLINES (WEATHER ACTION).

near the village of Molines, but on the opposite side of the valley, a remarkable natural pillar, in form not unlike a champagne bottle,

=<E5' 8?8@59' >885' ;7A;0' J ;7C;' ; B' =88@' G:<BEC8B' =9' 5;8' C57<@' <>' 5;8' J8 5;8:0' @B0' 7@' 66' G:<= =76759 0' C;78>69' =9' : 7@$ @' 5;7 ' C 8' ' Z=6<C I' <>' 8EG;<57B8' <:' B7 66 A8' :<C I' G:<58C5 ' ' >:7 =68' 67F 8 5<@803P' 5;8' C<@5: 5' <>' 5;7 ' B :I' C G' J75;' 5;8' J;758' = 80' @B' 5;8' 7@AE6 :759' <>' 5;8' ><: F0' F B8' 75' ' 5:7I7@A' <=!8C5$;8 8' @ 5E: 6' G766 : ' :8' F<@A' 5;8' F< 5' :8F :I =68' 8L FG68 ' <>' 5;8' G<58@5' 8>>8C5 ' G:<BEC8B' =9' 5;8' 6<@A C<@57@E8B' C57<@' <>' HE785 J<:I7@A' ><:C8 $;89' :8' ><E@B' 7@' 8?8: 6' <5;8:' G6 C8 ' 7@' 5;8' 6G 05' ' J8/' ' 86 8J;8:8$

;8' ?766 A8' <>' (7668' (787668' =< 5 ' <>' @' 7@@' J75;' 5;8' 7A@' <>' 5;8' 68G; @50 J;7C;0' 7@' 5;8' <G7@7<@' <>' 6<C 6' F 58E: 0' 7 ' ' G:<<>' 5; 5' @@7= 6' G 8B' 5;:<EA;' 5;8' A<:A8' <>' 5;8' &E76' ' :8F8F=8:' 5;8' G6 C80' =8C E 8' 75 ' =:8 B0' =87@A' <@69' ' F<@5;' <6B0.' J ' E@E E 669' <>50' @B0' ><:' 5;8' >7: 5' 57F 8' BE:7@A' 58@' B 9 0' 75' J ' G< 7=68' 5<' 8 5' <F80' J75;<E5' >7: 5' <>' 66' C;<GG7@A' 75' 7@5<' F 66' G78C8 ' @B' < I7@A' 75' 7@' ;<5' J 58:0' J;7C;' G:<BEC8B' ' 67F 9' G 58' <@' 5;8' <E5 7B80' =E5' 68>5' ' ; :B' F75<EC678B' I8:@86

;8' F8' B 9' ' C:< 8B' 5;8' <6' < :B' 5<' :7 @A<@$ 5' J ' 5;8' 5;' <>' EAE 50' @B' 66' 5;8' J<:6B' J ' ' & C' <E@B ' <>' :8?86:9' G:<C88B8B' >:<F' 5;8' ;<E 8 ' <>' 8:?7+:8 ' ' ' G 8B' <?8:' 5;8' =:7BA8' EG<@' J;7C;' 5;8' G9::;7C' B @C8' 7 ' @@E 669' G8:><:F8B0d @B' @ 57?8 ' 7@' 66' B>8A:88 ' <>' 7@8=:7 57<@' 5 AA8:8B' =<E5' 5;8' G 5; $ 5' J ' 6 58' =8><:8' 5;8' 67A;5 ' <>' 5;8' A:8 5' ><:5:8 ' C F8' 7@5<' 7A;50 =E5' E@C; 6D 68@A8B' ' G 8B' 5;:<EA;' 5;8' A 58 0' @B' <@C8' F<:8' <EA;5' ;8658:' E@B8:' 5;8' :<<>' <>' 5;8' <586' B8' E: $

P' .$ ' $ 4<:678 $

5 ' @' 5;8' A<:A8' <>' 5;8' ' :760' @8 :' < 5 0' @8 :' E 87A@80' 7@' 5;8' (6' BR 8:8@ ' 0' @8 :' 5 6B8@0' 7@' 5678' (7 G' ; 70' @8 :48:B8@0' 7@' 5;8' <5 C;8@' ; 70' @B0' <@' 'A: @B8:' : 680' @8 :' <5S8@0' 7@' 5;8' 9:<60' @B' 7@' F8:7C ' <@' 5;8' <6<: B<' :7?8:' <>' 5;8' J8 5$K' 88' C; G$ Q $

:' Z' @' @C78@5' @B' <68F@' CE 5<F' J766 ' 5; 5' 8 C;' > F769' F I8 ' 75 ' =:8 B' 7@' B? @C8' ><:' ' J;<68' 98 :0' 7@' <:B8:' 5<' ;<J' 5<' 5;8' 8@?7<E ' 5; 5' C<:@' 7 ' @<5' J @57@A$ 678' ' <@69' 8 5' @8\:' =:8 B' @<J' @B' 5;8@0' @B' B<' <' =8C E 8' 5;89' :8' E@ =68' 5<' F I8' 75' 5' <@C8' ><:' ' J;<68' 98 :$ E5' 5;89' :8' ; F8B' <>' 5;87:' G<?8:590' @B' J;8@' 5;89' :8' F I7@A' 750' ;7B8' >:<F' 5;8' 7A;5' <>' 5;87:' @87A;=<E: $' 3K 67 88' 8C6E 0' ' 2' %)"#' " $

' 88' B<EC8558R '):$#'4 ') ' G$ $

CROSSING MONT CENIS (1861).

CHAPTER III.

THE MONT CENIS—THE FELL RAILWAY—THE GREAT TUNNEL THROUGH THE ALPS.

GUIDE-BOOKS say that the pass of the Mont Cenis* is dull. It is long, certainly, but it has a fair proportion of picturesque points, and it is not easy to see how it can be dull to those who have eyes. In the days when it was a rude mountain-track, crossed by trains of mules, and when it was better known to smugglers than to tourists, it may have been dull; but when Napoleon's road changed the rough path into one of the finest highways in Europe, mounting in grand curves and by uniform grades, and rendered the trot possible throughout its entire distance, the Mont Cenis became one of the most interesting passes in the Alps. The diligence service which was established was excellent, and there was little or nothing

* See the general map.

to be gained by travelling in a more expensive manner. The horses were changed as rapidly as on the best lines in the best period of coaching in England, and the diligences themselves were as comfortable as a "milord" could desire. The most exciting portion of the route was undoubtedly that between Lanslebourg and Susa. When the zig-zags began, teams of mules were hooked on, and the driver and his helpers marched by their side with long whips, which they handled skilfully. Passengers dismounted, and stretched their legs by cutting the curves. The pace was slow but steady, and scarcely a halt was made during the rise of 2000 feet. Crack! crack! went the whips as the corners of the zig-zags were turned. Great commotion among the mules! They scrambled and went round with a rush, tossing their heads and making music with their bells. The summit was gained, the mules were detached and trotted back merrily, while we, with fresh horses, were dragged at the gallop over the plain to the other side. The little postilion seated on the leader smacked his whip lustily as he swept round the corners cut through the rock, and threw his head back, as the echoes returned, expectant of smiles and of future centimes.

The air was keen and often chilly, but the summit was soon passed, and one quickly descended to warmth again. Once more there was a change. The horses, reduced in number to three, or perhaps two, were the sturdiest and most sure of foot, and they raced down with the precision of old stagers. Woe to the diligence if they stumbled! So thought the conductor, who screwed down the breaks as the corners were approached. The horses, held well in hand, leant inwards as the top-heavy vehicle, so suddenly checked, heeled almost over; but in another moment the break was released, and again they swept down, urged onwards by whip, "hoi," and "ha" of the driver.

All this is changed. The Victor Emmanuel railway superseded a considerable portion of Napoleon's road, and the "Fell" railway

; ' 5;8 :8 5$ @ ' >8J' 98 : ' F<:8 5;8 A:8 5'5E@@86 <> 5;8 6G ' J766 ;8 C<FG6858B0 @B' 5; 5' J766 =:7@A =<E5 @<5;8:' C; @A8$

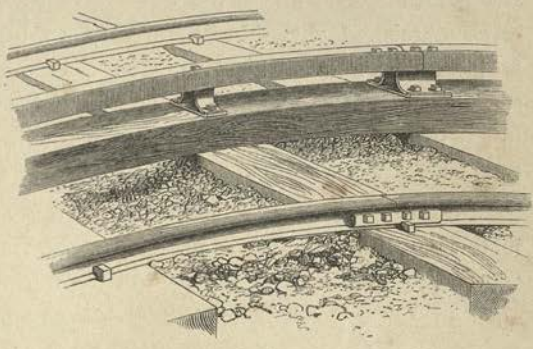
;8 4866 : 76J 90 J;7C;' ; ' =88@ <G8@ =<E5 87A;588@ F<@5; 0 7 ' ' @8 5; 5 J866 B8 8:?8 ' 558@57<@$;7:59 87A;5 98 : ' A< :$; :68 ' (7A@<668 0 5;8 8F7@8@5 8@A7@88:0 @B :$:7C <@0 G 58@58B 5;8 7B8 ' J;7C;' 7 ' @<J' @ CC<FG67 ;8B > C5 <@ 5;8 <@5 8@7 $ %<5;7@A J ' B<@8 J75;' 75 E@576 :$ 4860 5;8 G:<!8C5<:' <> 5;8 : 76D J 9 J;7C;' =8 : ' ;7 ' @ F80 5<<I' 75 EG0 @B 5< ;7F' FEC;' C:8B75 7 ' BE8 ><:' =:7@A7@A @ BF7: =68 G:7@C7G68 7@5< <G8: 57<@$

;8 4866 : 76J $9 ><66<J ' 5;8 A:8 5 8@7 ' :< B ?8:9 C6< 869 @B B7?8:A8 ' >:<F 75 875;8:' 5< ?<7B ?766 A8 ' <:' ;<E 8 0 <:0 ' 5 5;8 EF F75 <> 5;8 G '" <@ 5;8 5 67 @ 7B80 5< 8 8 5;8 A: B78@5 $;8 67@8 :E@ ' >:<F 5$ 7C;86 5< E $0 ;8 B7 5 @C8 =85J88@ 5;< 8 5J< G6 C8 ' 7 0 ' 5;8 C:<J' >678 0 6F< 5 8L C569 8HE7? 68@5 5< 5;8 B7 5 @C8 >:<F <@B<@ 5< ; 5; F0 =E5 =9 :8 <@ <> 5;8 @EF8:<E ' CE:?8 ' @B B85<E: ' 5;8 68@A5;' <> 5;8 67@8 7 ' @8 :69 =:<EA;5 EG 5< 5;8 B7 5 @C8 <> <@B<@ >:<F :7A;5<@$ 4:<F 5$ 7C;86 5< 5;8 EF F75 <> 5;8 G ' 75 :7 8 ' 22 ' >8850 <:' ' >885 F<:8 5; @ 5;8 ;7A;8 5 G<7@5 <> @<JB<@ 7 ' =<?8 5;8 68?86 <> 5;8 8 '0 @B >:<F 5;8 EF F75 <> 5;8 G ' 5< E 0 ' B7 5 @C8 68 ' 5; @ 5; 5 >:<F <@B<@ 5< U8J0 75 B8 C8@B ' @< 68 ' 5; @ Q ' >885 ']

;8 : 76J 9 75 86> 7 ' ' F :?86$ 4<:' >6>588@ F768 ' @B 5;:88 ' HE :58: ' 75 ; ' 588G8:' A: B78@5 ' 5; @ <@8 7@ >7>588@$ @ <F8 G6 C8 ' 75 7 ' <@8 7@ 5J86?8 @B ' ; 6> ' @ 7@C67@8 5 5;7 ' @A6P 5 :57@A >:<F 5;8 = 8 <> 5;8 %86 <@ <6EF@ 7@ : > 6A :' HE :80 J<E6B :8 C;' 5;8 5<G <> 5$ E6R ' 5;8B: 6 7> 75 J8:8 G6 C8B 5 8FG68 :' 5 ' 5: 7A;5 G78C8 <> : 76J 9 C<@ 5:EC58B <@ EC;' ' A: B78@5 88F ' 5< A< EG ' 588G ;7 $ @8 7@ 87A;590 <:' 8?8@ <@8 7@ ' ;E@B:8B0 G:<BEC8 ' ' ?8:9 8@ 7=68 B7F7@E57<@ 7@ 5;8 G C8 <> ' 67A;5 5: 7@ B: J@ =9 @ <:B7@ :9 6<C<F<57?8 0 ;<J' 5;8@7 ' ' 5: 7@ 5< =8 5 I8@ EG @ 7@C67@8 5; 5 7 ' 6 57F8 ' ' 588+7 5 7 ' CC<FD G67 ;8B =9 F8 @ ' <> ' 5;7:B : 76 G6 C8B F7BJ 9 =85J88@ 5;8 5J+< <:B7@ :9 <@8 0 @B 868? 58B =<?8 5;8F$P ;8 8@A7@8 ' :8 G:<?7B8B

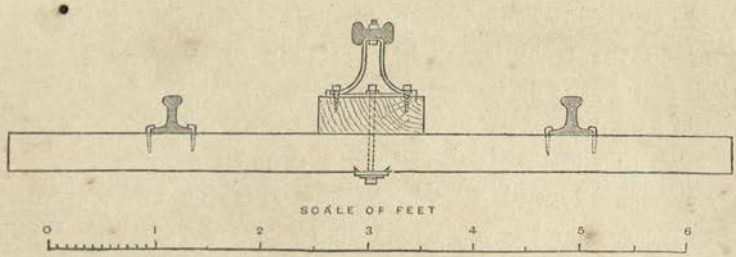
P ;7 ' 5;7:B : 760 <:0 $ ' 75 7 ' 58: F8B0 Z 5;8 C8@5:8 : 7603 7 ' 6 7B <@ 66 5;8 588G G<:

with two pairs of horizontal driving-wheels as well as with the ordinary coupled vertical ones, and the power of the machine is thus enormously increased; the horizontal wheels gripping the centre rail with great tenacity by being brought together, and being almost incapable of slipping, like the ordinary wheels when on even a moderate gradient.*



THE CENTRE RAIL ON A CURVE.

The third rail is the ordinary double-headed rail, and is laid horizontally; it is bolted down to wrought iron chairs, three feet apart, which are fixed by common coach-screws to a longitudinal sleeper, laid upon the usual transverse ones: the sleepers are attached to each other by fang-bolts. The dimensions of the different parts will be seen by reference to the annexed cross section :—



Let us now take a run on the railway, starting from St. Michel. For some distance from that place the gradients are not of an ex-

tions of the line, and round all except the mildest curves. Thirty miles, in all, of the road have the centre rail.

* These engines are described in the reports by Captain Tyler to the Board of Trade.

5: <:B7@ 79 C; : C587!' @B ' A<<B G C8 7 ' F 7@5 7@8B$;8 >7: 5 8?8:8 G78C8 7 ' =<E5 5J< F768 ' EG J;8:8 5;8:8 7 ' @ 7@C;@8 <> <@8 7@ 87A;588@P ><: F<:8 5; @ ; 6> F7680K 5; 5 7 '5< 9 5;8 67@8 :7 8 ' 5 <@8 58G <@8 ;E@B:8B @B 7L59 ><E: >885$ 4:<F' 5;8@C8 5< <B @8 5;8 A: B78@5 ' :8 A 7@ F<B8: 58 M><: 5;8 486 : 76J 9 @B 5;8 B7 5 @C8K =<E5 58@ F768 ' @B ' ; 6> >:<F 5$ 7C;86K ' 7 ' CC<FG67 ;8B J75;<E5 B7>>7CE659 7@ @ ;<E:$ <B @8 5 57<@ 7 ' Q ' >885 =<?8 5$ 7C;86 < 5; 5 <@ 5;7 ' ' G<:57<@ <> 5;8 67@8 5;8:8 7 ' @ ?8: A8 :7 8 <> ' >885 G8: F768 J;7C;' 7 '8HE 6 5< 'A: B78@5 <> <@8 7@ ><:59 87A;50 @ 7@C67@ 57<@ E>>7C78@569 588G 5< =:7@A @ <:B7@ :9 6<C<F<57?8 ?8:9 @8 :69 5< ' ; 65$

.E 5 >58: G 7@A <B @8 5 57<@ 5;8:8 7 ' <@8 <> 5;8 588G8 5 7@C67@8 ' <@ 5;8 67@80 @B 75 88F ' G:8G< 58:<E ' 5< EGG< 8 5; 5 @9 5: 7@C<E6B C8@B 75$ ' 5<GG A8 <> 58@ F7@E58 '7 ' F B8 5 <B @80 @B <@ 68 ?7@A 5; 5 5 57<@0 5;8 5: 7@ A<8 ' <>> 5 5;8 ;7 / ' J75; ' :E ;$ @ ' >8J' 9 :B ' 75 ' G C8 7 ' :8BEC8B0 @B 75 C<F8 ' B<J@ @B B<J@ 5< =<E5 ><E: F768 ' @ ;<7E"0 J;7C;' G88B 7 ' E E 669 F 7@5 7@8B E@576 5;8 7@C67@8 7 ' G 8B0 J75;<E5 ' B7F7@E57<@ <> 5;8 58 F G:8 E:8$ ' 9 E E 6690 =8C E 80 7> 75 ;<:BB ; GG8@5; 5 5;8:8 7 ' @<5 E>>7D C78@5 58 F0 <: ;<E6B 5;8 B:7?8: ; GG8@ 5< F I8 ' 67G0 5;8 5: 7@ J<E6B F< 5 67I869 C<F8 = CI 5< <B @8 0 ><:0 65;<EA;' 5; ' =:8 I ' G<J8: <@ 5;8 5: 7@ 7 ' FEC;' F<:8 5; @ E>>7C78@5 5< G:8?8@5 75 :E@@7@A = CI0 5;8 B:7?8: C<E6B ; :B69 5 :5 J75;' 5;8 =:8 I ' <@0 @C+ 5;8 5: 7@ J<E6B 7@8?75 =69 :E@ = CI ' 7>' 5;89 J8:8 <>$

>58: 5;7 ' 7@C67@8 7 ' G 8B0 5;8 67@8 F<E@5 ' =9 C<FG : 57?869 8 9 A: B78@5 ' 5< J :B ' 4<:5 8 876 <@0 75 7 ' 5;8@ 5 ' A:8 5 ;87A;5 =<?8 5;8 :C0 @B ' <@8 J7@B ' :<E@B 5;8 > C8 ' <> 5;8 C67>> <E5 <> J;7C;' 5;8 G<68<@ :< B J ' CE50 6<< I7@A B<JF EG<@ 5;8 >< F7@A 5:8 F =86<J0 J75;<E5 ' E G7C7<@ <> ' G : G85 =85J88@ 5;8 : 76D J 9 @B 5;8 8BA8 <> 5;8 G:8C7G7C80 <@8 @ 5E: 669 5;7@I ' =<E5 J; 5 J<E6B ; GG8@ 7> 5;8 8@A7@8 ;<E6B 68 ?M^ 5;8 : 76 $;8 G88B0 ;<J8?8:0 5; 5 7 ' I8G5 EG 5 5;7 ' G :5 7 ' ?8:9 A8@5680 @B

P ;8 7@C67@ 57<@ <> 5;8 588G8 5 G :5 <> 6B <6;<F 7660K7 7 ' 3 ' 9

6 * !)(F <=

5;8:8 7 G:<= =69 FEC;68 :7 I <> ;@ CC7B8@5 5; @ 5;8:8 J 7@ 5;8 B 9 <> B767A8@C8 $

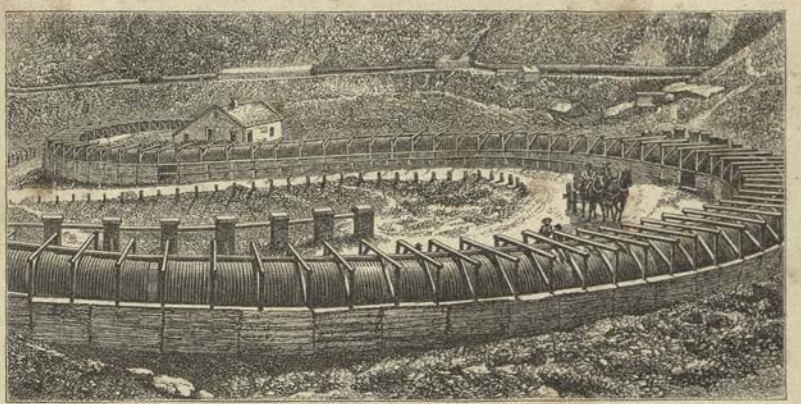
;8 @8L5 :8F :I =68 G<7@5 <@ 5;7 67@8 7 5 8:F7A@<@$;8 ? 6689 5E:@ <F8J; 5 =:EG569 5< 5;8 8 50 @B 5;8 C<E: 8 <> 5;8 : 76J 9 7 @<5 5 >7: 5 G8:C87?8B$ 5 F I8 A:8 5 =8@B 5< 5;8 68>50 5;8@ B<E=68 = CI @B :7 8 7@ 675568 F<:85; @ F768 @< 68 5; @ 5;:88 ;E@B:8B @B 5;7:59 ><E: >885$;7 7 G8:; G 5;8 F< 5 5:7I7@A G78C8 <> 5;8 J;<68 67@8$

@ 68=<E:A 5 57<@ "Q .' F768 >:<F @B QQQ >885 =<?80 5$ 7C;860 7 ::7?8B 5 ;: 5J< ;<E: @B HE :58: >:<F 5;8 6 558: G6 C8$;8 8@A7@8 :8 @<J" C; @A8B$;E > : J8 ; ?8 =88@ 5: ?8: 7@A 5;8 8 9 G<:57<@ <> 5;8 :<E580 =E5 ;8:8 5;8 ;8 ?9 8C57<@ =8A7@ $ 4:<F @ 68=<E:A 5;8 67@8 :7 8 C<@57@E<E 69 5< 5;8 EFD F75 <> 5;8 <@5 8@7 G 0 @B CC<F G67 ;8 @ C8@5 <> QQ2 >885 7@ 7L F768 @B 5;7:B <> B7 5 @C8$

5 7 CE:7<E @B 7@58:8 57@A 5< J 5C;5;8 C8@5 <> 5;8 5: 7@ >:<F @ 68=<E:A$;8 GE>> <> 58 F :8 88@ :7 7@A =<?8 5;8 5:88 0 <F857F8 A<7@A 7@ <@8 B7:8C57<@0 @B <F857F8 B7:8C569 5;8 C<@5: :90 <CC 7<@ 669 C<@C8 68B =9 5;8 C<?8:8B J 9 K ><: <?8: 5J< F/8 <E5 <> 5;8 7L 5;8 67@8 7 8@C6< 8B =9 G6 @I8B 7B8 @B C<::EA 58B ;<@ :<<> 5< I88G <E5 5;8 @<J K @B 5;8@ C<F7@A <E5 A 7@ 7@5< B 967A;5$; 65 ><: J 58: ; 5< =8 F B8 =<E5 ; 6>D J 9 EG0 =E5 5;8 8@A7@8 :8 =68 5< 5 :5 A 7@0 @B 5< :8 EF8 5;87: 58 <> 8?8@ F768 @ ;<E:0 65;<EA;5;8 A: B78@5 7 @< 68 5; @ <@8 7@ ><E:588@ @B ; 6>$;8 S7AS A <> 5;8 <6B 8@7 :< B :8 J866 I@<J@ <@8 <> 5;8 F< 5 :8F :I =68 G78C8 <> :< BD 8@A7@88:7@A 7@ 5;8 6G $;8 : 76J 9 ><66<J 5;8F0 @B :E@ G : 6686 5< 5;8 :< B <@ 5;8 <E5 7B8 5;:<EA;<E5 75 8@57:8 B7 5 @C80 J75 5;8 8LC8G57<@ <> 5;8 5E:@ 5 5;8 C<:@8: 0 J;8:8 75 7 C ::78B 675568 >E:5;8 <E50 5< :8@B8: 5;8 CE:?8 68 ; :G$ %8?8:5;868 5;89 :8 E6>7C78>7569 ; :G M >885 : B7E N0 @B J<E6B =8 7FG: CD 57C =68 J75;<E5 5;8 C8@5:8 : 76$

;8 :E@ C:< 5;8 5<G <> 5;8 G 0 >:<F 5;8 EF F75 5 57<@ 5< 5;8 &: @B8 :<7L 5 57<@K B7 5 @C8 <> =<E5 >7?8 F768 K7 <<@

accomplished, and then the tremendous descent to Susa is commenced. This, as seen from the engine, is little less than terrific. A large part of this section is covered in,* and the curves succeed one another in a manner unknown on any other line. From the outside the line looks more like a monstrous serpent than a railway.

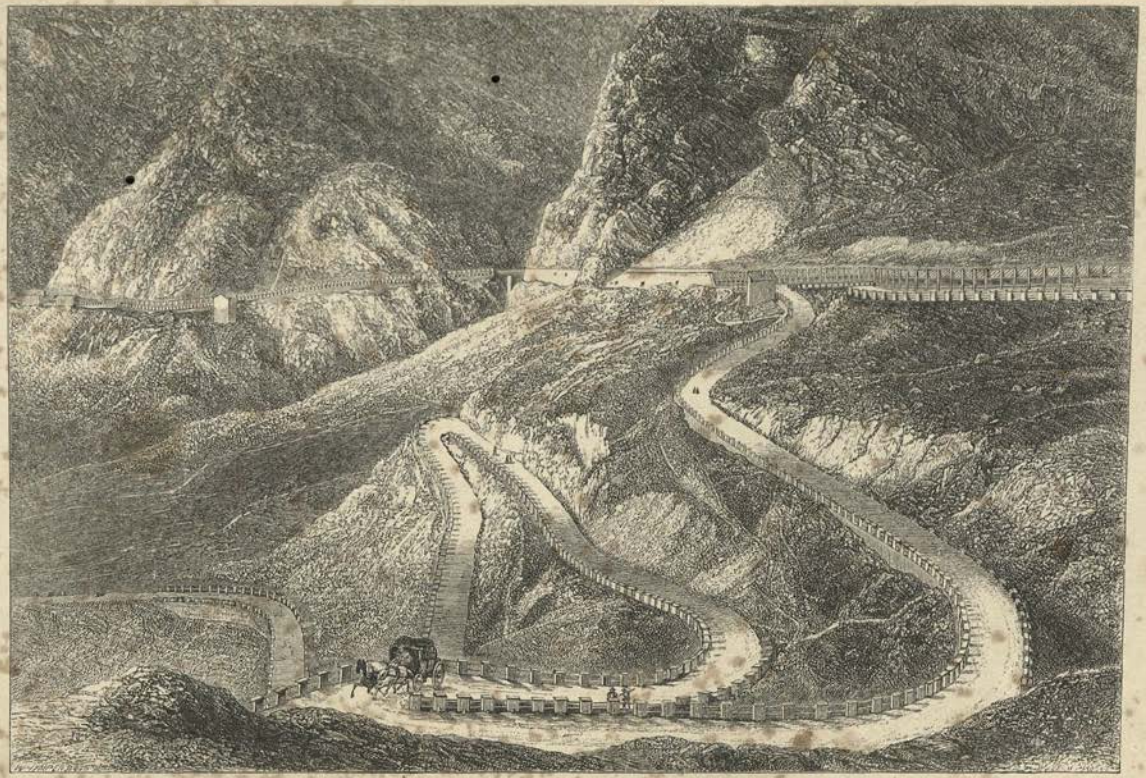


THE COVERED WAYS ON THE "FELL" RAILWAY (ITALIAN SIDE OF THE MONT CENIS).

Inside one can see but a few yards ahead, the curves are so sharp, and the rails are nearly invisible. The engine vibrates, oscillates, and bounds; it is a matter of difficulty to hold on. Then, on emerging into the open air, one looks down some three or four thousand feet of precipice and steep mountain-side. The next moment the engine turns suddenly to the left, and driver and stoker have to grip firmly to avoid being left behind; the next, it turns as suddenly to the right; the next there is an accession or diminution of speed, from a change in the gradient. An ordinary engine, moving at fifty miles an hour, with a train behind it, is not usually very steady, but its motion is a trifle compared with that of a Fell engine when running down hill.

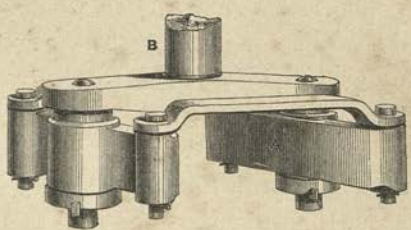
It may be supposed from this that travelling over the Fell rail-

* On the Italian side there are about three-quarters of a mile of strongly-built avalanche galleries, and more than three miles of covered way.



THE MONT CENIS ROAD AND THE FELL RAILWAY, NEAR THE SUMMIT OF THE PASS, ON THE ITALIAN SIDE.

way is disagreeable rather than pleasant. It is not so; the train is steady enough, and the carriages have remarkably little motion. Outside they resemble the cars on the Swiss and American lines; they are entered at the end, and the seats are arranged omnibus-fashion, down the length of the carriage. Each carriage has a guard and two breaks,—an ordinary one, and a centre rail break; the handles of these come close together to the platform at one end, and are easily worked by one man. The steadiness of the train is chiefly due to these centre rail breaks. The flat face A, and the corresponding one on the opposite side, are brought together against the two sides of the centre rail by the shaft B being turned, and they hold it as in a vice. This greatly diminishes the up-and-down motion, and renders oscillation almost impossible. The steadiness of the train is still further maintained by pairs of flanged guide-wheels under each of the carriages, which, on a straight piece of line, barely touch the centre rail, but press upon it directly there is the least deviation towards either side.* There is no occasion to use the other breaks when the centre rail breaks are on; the wheels of the carriages are not stopped, but revolve freely, and consequently do not suffer the deterioration which would otherwise result.



CENTRE RAIL BREAK.

The steam is shut off, and the breaks are applied, a very few minutes after beginning the descent to Susa. The train might then run down for the entire distance by its own weight. In practice, it is difficult to apply the proper amount of retardation; the breaks have frequently to be whistled off, and sometimes it is necessary to

* The carriages are not coupled in the ordinary way, and although there are no buffers, properly speaking, and in spite the speed of the train being changed incessantly, there is a freedom from the jarring which is so common on other lines. The reason is simply that the carriages are coupled up tightly.

58 F' B<J@' A 7@ 5' 5;8F$' ;8<:857C 6690' 5;7 ' <EA;5' @<5' <>' C<E:8' 5<' <CCE:0' 75' <@69' ; GG8@ ' <CC 7<@ 6690' @B' <:B7@ :769' 5;8' 5: 7@' A<8 ' B<J@' J75;' 5;8' 58 F' ;E5' <>>0' @B' J75;' 5;8' C8@5:8' : 76' =:8 I ' C:8J8B' EG' F<B8: 5869$');8@' @' ?8: A8' 5: 7@K5; 5' 7 0' 5J<' <:' 5;:88' C ::7 A8 ' @B' '6EAA A8 ? @K7 ':E@@7@A'B<J@' 5'5;8' F L7FEF' G88B' 66<J8B' M>7>588@' F768 ' @' ;<E:N0' 5;8' =:8 I ' C @'GE66'75'EG'B8 B' J75;7@' 8?8@59'9 :B $' ;8' G C8' 7 ' G:<G8:69' I8G5' B<J@' 5<' ' 6<J' G<7@5' 7@' B8 C8@B7@A0' @B' B<7@A' <0' C<F=7@8B' J75;' 5;8' I@<J68BA8' 5; 5' 5;8' =:8 I G<J8:' C @' 8 769' 68 8@' 750' J766' 58@B' 5<' F I8' 5;8' GE=67C' 6<<I' > ?<E: =69' <@' J; 5' F7A;5' <5;8:J7 8' =8' C<@ 7B8:8B' ' B @A8:<E ' 7@@<? 57<@$' ;8' 8@A7@8 ' 6 <' :8' G:<?7B8B' J75;' 5;8' C8@5:8' : 76' =:8 I0' <@' ' G 558:@' <F8J; 5' B7>>87B@5' >:<F' 5;< 8' <@' 5;8' C ::7 A8 0' @B' 5;8' >6 5' 7B8 ' J;7C;' G:8 ' A 7@ 5' 5;8' : 76 ' :8' :8@8J8B' 'G 2 ' 5' 7 ' ;7A;69' B8 7: =68' 5; 5' 5;89' ;<E6B' =80' ><:' ' 7@A68' :E@' >:<F' @ 68=<E:A'5<' E ' A:7@B" ' 'A:<<?8'7@5<'5;8F' =<E5'5;:88 87A;5; ' <>' @'7@C;'7@' B8G5;$

' :7?7@A'5;8'5: 7@ ' <?8:' 5;8' EF F75' 8C57<@' :8HE7:8 ' 5;8' F< 5' C<@ 5 @5' 558@57<@0' @B' @<' F 66' F<E@5'$<>' @8:?80' @B' 5;8' B:7?8: 0' J;<' :8' 66' @A67 ;0' ; ?8' J866' 8 :@8B' 5;87:' F<@89' 5' 5;8' 8@B' <>' 5;87:' :E@$' ;87:' <G7@7<@' <>' 5;8' 67@8' J ' C<@C7 869' @B' ><:C7=69' 8LG:8 8B' 5<' F8' =9' <@8' <>' 5;8F' 7@' 6 5' EAE 5$' Z' 8^0' F7 58:0' 5;89'5<6B' E ' ;<J' 5;8' 67@8' J ' ?8:9' 588G0' =E5' 5;89' B7B@R5' 9' 5; 5' 5;8' 8@A7@8' J<E6B' ;8' <@' <@8' CE:?80' J;8@' 5;8' ><E:A<@' J ' <>7' @<5;8:0' @B' 5;8' C ::7 A8 ' J ' <@' ' 5;7:B$' ;8F' A: B78@5 0' 5<<0' F7 58:0' 5;89' 9 ' 5;89' :8' <@8' 7@' 5J86?80' =E5' ' 5;7@I' 5;89' :8' <@8' 7@' ' ' $ ' ' @B' 5;89' B7B@R5' 9' ' ;<J' J8' J ' 5<' C<F8' B<J@' 5;8F' 7@' 5; 5' @ I8J7 8' > ;7<@$' 5R' J<: 8' 5; @' 5;8' &$ $ $0P' F7 58:' 0 5;8:8' '>866<J' C<E6B' !EFG' <>>0 =E5' ;8:80' 7@' 5;8F' C<?8:8B' J 9 0' 5;8:8' 7@R5' @<' G6 C8' 5<' !EFG' 5<$3

;8' 866' : 76J 9' 7 ' <>' 5;8' @ 5E:8' <>' @' 8LG8:7F8@5 6' 67@80' @B

P' ;8' &:8 5' @B7 @' 8@7@ E6 ' 76J 90' 5;8' 67@8' J75;' 5;8' C868=: 58B' ;<:8' &; E5' 7@C67@80' 7L588@' F768 '6<@A0' <@' @' ?8: A8' A: B78@5' <>' <@8' 7@' ><:59 87A;50' "J;7C;' 7 ' 7B' 5<' ; ?8' C< 5' 0 0' <:' =<E5' B<E=68' 5;8' 8@57:8' C< 5' <>' 5;8' <E@5' 8@7 ' 76J 90' @B' 7L' 57F8 '75 ' C< 5' F768' ><:' F768$;8' 4866' : 76J 9' C< 5' ' G8:' F768$

6 * 4)! < ' 4 ' * (

8 57F 5803 9 ' $ <@580P Z 567 5 5;8 7@6B@A <> ' ; >5 ' F768 7@ B8G5;' J<@6B <CCEG9@<5 68 ' 5; @ ><:59 98 : $ ' B< @<5 I@<J' 5; 5 ' B8G5;' <> ' >885 ; ' ;88@ ;75;8:5< G 8B$3>

Z 8?8: 6 G:<!8C5 ' J8:8 G:8 8@58B 5< 5;8 :B7@7 @ A<?8:@F8@50 <F8 G:<G< 7@A 5< ;<:58@ 5;8 68@A5;' <> 5;8 5E@@86 ;9 : 7 7@A 75 ' 68?860 @B <5;8: ' 5< CC868: 58 5;8 ;<:7@A <> 5;8 ;<68 ' ><:' =6 57@A0 ;E5 5;89 J8:8 66 GE5 7B8 ' 7FG< 7=680 <:' ' ; ?7@A =88@ 7@ E>>7D C78@569 5EB78B$;8 >7: 5 <@8 8:7<E 69 C<@ 7B8:8B ;9 5;8 A<?8:@D F8@5 J ' 5; 5 <> $ @ 0 ' 86A7 @ 8@A7@88:$ 8 G:<G< 8B 5< C<@ 5:EC5 ' 5E@@86 <> Q0Q ' F85:8 ' =85J88@ :B<@@ C;8 @B <B @80 J75;' ' :E67@A A: B78@5 <> ' 7@ $;8 B? @C8 G> 5;8 F 66 A 668:9 7@ >:<@5 J ' 5< ;8 F B80=9 F8 @ ' <> ' F C;7@8 J75;' C677 86 0 GE5 7@ F<57<@ =9 G:7@A 0 5; 5 J<E6B ; ?8 CE5 5;8 :<C I 7@5< =6<C I K C68 ?7@A 5;8F 55 C;8B <@69 5 5;8 = C I K J;7C;' J8:8 >58:D J :B ' 5< =8 =:<EA;5 B<J@ =9 F8 @ ' <> J8BA8 $3

Z $ <66 B<@ <> &8@8? ' EAA8 58B F<?7@A 5;8 5<<6 ' <> 5;8 F C;7@8 <> $ @ ' =9 F8 @ ' <> C<FG:8 8B 7:0 =E5 ;8 @875;8:' G<7@58B <E5 5;8 F8 @ ' <> C<FG:8 7@A 5;8 7:0 @<:' ;<J' 75 J ' 5< =8 GG;8B ' ' F<57?8 G<J8:$3

Z ;8 A<?8:@F8@5 ; B C<@ 5:EC58B 5;8 : 76J 9 >:<F E:7@ 5< &8@< 0 e@B 8@A7@88: ' J8:8 5EB97@A ;<J' 5< 5EA 5;8 5: 7@ ' EG 5;8 7@C67@8 5 E 66 0 J;7C;' ; ' ' A: B78@5 <> ' 7@ Q $ $ &: @B7 0 &: 55<@70 @B <F F87668:' G:<G< 8B 5< C<FG:8 ' 7:' ;9 F8 @ ' <> 5;8 ¢C<FG:8 8E:' 77 C;C0R J;7C;' 7 ' @<J' E 8B <@' 5;8 J<: I ' <> 5;8 8@7 ' 5E@@860 @B 5< 8F G6<9 75 ><:' 5;8 5: C57<@ <> 5;8 5: 7@ $3

Z :$:568550 @ @A67 ;R8@A7@88:' <@' 5;8 (7C5<:' F F @E86 76J 90 _; B 7@?8@58B ' F C;7@8 ><:' F I7@A ';<68 ' ><:' =6 57@A$

P $ <@580 ' J866 I@<J@ 4:8@C67 8@A7@88:0 J ' ' F8F=8:' <> ' C<F F7 7<@ G ' 7J7@58B 5< 8L F7@8 5;8 G:<A7 8 ' <> 5;7 ' 5E@@86 7@ $ 7 ' :8G<:5 7 ' 5;8 F< 5 778<E: 58 @B 5;8 F< 5 C<FG6858 CC<E@5 <> 75 5; 5 ; ' =88@ GE=67 ;8B$

' $ <@58 :8>8:^5< 5E@@86 ; >5 $

.' ;8 (7C5<:' F F @E86 76J 9 <FG @9 ; ' C8 8B 5< 8L7 55 ;8 8C57<@ 7@ 4: @C8 7 ' !<7@8B 5< 5;8 :7 0 9<@ 0 @B 8B758:: @8 @ 76J 90 @B 5; 5 7@ 5 69 5< 5;8 65 ' 5 67 ' 9 58F$;8 : 76 J 9 >:<F 5;8 4:8@C;' F<E5;' <> 5;8 5E@@86 5< 5$ 7C;86 J766 =8 F B8 5 5;8 C< 5 <> 5;8 :7 0 9B@ 0 @B 8B7587R: @8 @ <FG @9$

J ;7C ;′ J ′ GE5′ 7@′ F <57<@′ =9′ 58 F$ 678′ F C ;7@8′ J ′ 7F G8 :>8C50′ @B′ J ;768′ 8LG8 :7F 8@5 ′ J8 :8′ =87@A′ F B8′ J75 ;′ 75′ M=9′ F8 @ ′ <>′ C<F D G:8 8B′ 7:N0′ $ <@7F 87668 :′ 7@?8@58B′ 5 ;8′ =<:7@A F C ;7@8′ J ;7C ;′ 7 ′ @<J′ E 8B′ 7@′ 5 ;8′ 5E@@86$3

Z ;8′ G:<=68 F′ 5 ;8@′ G+<8 :8B′ 5<′ =8′ <6?8B$;8′ 7@?8@59 : ′ !<7@8B′ 5 ;8F 86?8 ′ 5<′ $ @C<K J ;<′ ; B′ 5 I8@′ G :5′ 7@′ 5 ;87 :′ 8LG8 :7F 8@5 ′ <@′ 5 ;8′ &8@< ′ 76J 9K G:8G :8B′ ′ C ;8F 80′ @B′ G:8 8@58B′ 75′ J75 ;′ C<@>7B8@C8′ 5<′ 5 ;8′ A<?8 :@F 8@50′ >58 :′ ; ?7@A′ ><E@B′ <E5′ 5 ; 5′ 5 ;89′ C<E6B′ C<F G:8 ′ 7 :′ 5<′ ′ ;7A ;′ G:8 E:80′ 5 ; 5′ 5 ;7 ′ 7 :′ C<E6B′ =8′ 68B′ >:<F′ C6< 8B′ :8 8 :?<7 : ′ @B′ 5 : @ F 7558B′ 5<′ A:8 5′ B7 5 @C8 ′ J75 ;<E5′ ′ 8@ 7=68′ B7F 7@E57<@′ <>′ 75 ′ G:8 E:80′ @B′ 5 ; 5′ 75′ C<E6B′ =8′ 8F G6<98B′ 5<′ F<?8′ 5 ;8′ =<:7@A F C ;7@8′ J677C ;′ J ′ 7@58@B8B′ 5<′ F I8′ 5 ;8′ ;<68 ′ ><:′ =6 57@A$ ′ C<F F7 7<@′ J ′ GG<7@58B′ 5<′ 8L F7@8′ 5 ;8′ G:<!8C50′ @B′ 75 ′ F8F=8 : ′ 57 >78B′ 5 ;8F 86?8 ′ 5 ; 5′ 5 ;8′ C ;8F 8′ J ′ >8 7=68$;8′ C5′ <>′ EAE 5′ 0′ 10′ E5 ;<:7 8B′ 5 ;8′ A<?8 :@F 8@5′ 5<′ C<@ 5 :EC5′ 5 ;8′ 8C57<@′ <>′ 5 ;8′ (7C5<:′ F F @E80′ 76J 9′ =85J88@′ E ′ @B′ <B @8$ $ &: @B7 0′ &: 55<@70′ @B′ <F F 87668 :0′ J8 :8′ GG<7@58B′ 5<′ B7 :8C5′ 5 ;8′ J<:I $3

Z $ 8B 76′ 7@B7C 58B′ 5 ;8′ A8@8 : 6′ B7 :8C57<@′ <>′ 5 ;8′ 5E@@86′ =8D 5J88@′ <B @8′ @B′ :B<@@dC ;8$ $ @ ′ B:8J′ ;7 ′ 67@8′ ′ 675568′ F<:8′ 5<′ 5 ;8′ 8 50′ @8 :8 :′ 5<′ <B @8$;8′ 8@A7@88 : ′ J ;<′ B>:CC5′ 5 ;8′ J<:I′ ; ?8′ GG:< C ;8B′ 5 ;8′ 6 558 :′ C<E: 80′ @B′ ; ?8′ 868C58B′ 5 ; 5′ J ;7C ;′ 88F 8B′ 5<′ 5 ;8F′ 5<′ =8′ 5 ;8′ ;<:58 50′ 5 ;8′ F< 5′ 8 9′ 5<′ C<F 8′ <E5′ 50′ @B0′ 8 G8C7 669 0′ 5 ;8′ F< 5′ C<@?8@78@5′ 5<′ 6 9′ <E5$3

Z 5′ 7 ′ @88B68 ′ 5<′ 7@ 7 5′ <@′ 5 ;8′ 7F G<:5 @C8′ <>′ 5 ;8′ 5: C7@A′ <>′ 5 ;8′ C<E: 8′ <>′ 5 ;8′ 5E@@86$ 5′ J ′ @8C8 :9K 50′ <′ 8 5 =67 ;′ EG<@′ 5 ;8′ F<E@5 7@′ ′ E>>7C78@5′ @E F=8 :′ <>′ F :I ′ 7@′ <:B8 :′ 5<′ B858 : F7@8′ 5 ;8′ ?8 :57C 6′ G6 @8′ G 7@A′ 5 ;:<EA ;′ 5 ;8′ L7 ′ <>′ 5 ;8′ A 8 :90 Q$ <′ F8 E:8′ 8L C569′ 5 ;8′ B7 5 @C8′ =85J88@′ 5 ;8′ 5J<′ F<E5 ; ′0 $ <′ B8 ′ 58 : F7G8′ 5 ;8′ B7>>8 :8@C8′ <>′ 68?86′ =85J88@′ 5+8′ 5J<′ F<E5 ; 0′ 7@′ <:B8 :′ 5<′ : : @A8′ 5 ;8′ A: B78@5 ′ <>′ 5 ;8′ 5E@@86$3]

Z ;8 8′ B867C 58′ <G8 : 57<@ ′ J8 :8′ 8@5 :E 58B′ 5<′ $ <:8667′ @B′ <G8 /<$ $ &: @B7 ′ E@B8 :5<<I′ 5 ;8′ C<@5 :<6′ <>′ 5 ;8′ J<:I$3

Z >58 :′ 5 ;8′ 5J<′ F<E5 ; ′ ; B′ =88@′ B858 : F7@8B′ EG<@0′ 5 ;89′ 85′ <E5

>:<F' 4<77:@8 EL' 5<' 5: C8' ' 67@8' 7@' 5;8' EGG< 8B' B7:8C57<@' <>' :' B<@@+C;8$;7' >7: 5'67@8' C F8' <E5'7@'5;8'? 6689'<>' <C;8F</8' 5' 'G<7@5'5<<' > :' <>' >:<F'5; 5'>7L8B'EG<@0' ;E5'J75;'75' ';86G' ' 8C<@B' 67@8' J 'B: J@' J;7C;'C F8' E>>7C78@569'@8 :'5<'5;8'G:<G< 8B'8@5:9$;8 8'67@8' J8:8' E= 8HE8@569' 57 '>E:5;8:'C<::8C58B$;8 8'<G8: D 57<@'<CCEG78B'5;8'F<@5;'<>' EAE 5' @B' 8G58F=8:' 1$3

Z' ;8'<= 8:? 57<@'J8:8'F B8'J75;'5;8<B<6758'J;7C;';B'=88@' C<@ 5:EC58B'J75;'5;8'A:8 58 5'C :80' @B' J;7C;':8 B'5<' Y'<@'5;8' ?8:@78:$;8' @8' ; '=88@'?8:7>78B' 8?8: 6'57F8'=9'B7>>8:8@5'<=D 8:?8: 0' @B'5;8':8 E65' ;<J'5; 5' 5: 7A;5'67@8'; '=88@'6 7B'<E5$ EGG< 7@A'5; 5' 5 8' A:8 58 5' 8::<:3'MBE8'5<'5;8'7@ 5:EF8@5N'Z'; B' =88@' F B80'5;8'B8?7 57<@'>:<F'5;8' 5: 7A;5'67@8'J<E6B'@<5' F<E@5' 5<'F<:8'5; @'<@8'><<5$ $ <:86;' @B' <G866<'F I8 KG8: <@ 669' K5;8'<= 8:? 57<@'><:'5;8'B7:8C57<@' @B'><:'5;8'?8:7>7C 57<@'<>'5;8' C5E 6'C<E: 8'<>'5;8'5E@@860' @B'J8'F 9'7F A7@8'5; 5'5;89'J 6'@<5' :8 B769'68 ?8'5<'<5;8:' EC;'B867C 58'J<:I0'EG<@'J;7C;'5;8' ECC8 '<>' 5;8'8@58:G:7 8'B8G8@B $ 66'5;8'F :I'<@'5;8' <E5;8:@' 7B80' @B'5;8' F< 5' 7FG<:5 @5' <@8'<@'5;80'@<:5;8:@' 7B80' J8:8'>7L8B'=9'5;8'>7: 5' B 9'<>' C5<=8:' 10' @<J> 66' @B'¢5<E:F8@58 R :85 :B8B'5;8' J<:I0'=E5'75'J '@8?8:5;868 'C<FG6858B'=9'5;8'8@B'<>'5;8'F<@5;$3

Z 6>' ' 5;8'5:7 @AE6 57<@' @B'68?8667@A'J8:8'E@B8:5 I8@0' @B'5;89'J8:8'58:F7@ 58B' 5'5;8'8@B'<>'5;8'98 :$3"

Z' ;8'5:7A<@<F85:7C 6'J<:I';'><:''= 8'<@8'<>'5;8' 7B8'<>'5;8' Y5:7 @A68'<>'5;8' 5 5' !<:0' @B'EG<@'75'5J<' 85'<>'5:7 @A68';?8' =88@0C<@ 5:EC58B0'<@8'5<J :B'5;8' <E5;8:@' @B'5;8'<5;8:'5<J :B' 5;8'@<:5;8:@' 7B8$;8'5J<' 9 58F' :8'><:F8B'<>'5J8@59 87A;5' 5:7 @A68 0' @B'5;8' @EF=8:'<>' @A68'F8 E:8B'7'87A;59 7L$;8' F !<:759'<>'5;8' @A68';?8'=88@':8G8 58B' 5'68 5'5J8@59'57F8'0 5;<8'<>'5;8'G:7@C7G 6'5:7 @A68';?8'=88@'5 I8@'>7>59'57F8 0' @B0'<>'5;8' F /'<@8 0' 5'68 5'58@'57F8 $;8'5;8<B<6758'8F G6<98B':8 B'5<' Y$3

Z @8'C @' F:B69'A7?8' @'7B8'<>'5;8'B7>>7CE6578'5; 5'5;8' <=D 8:?8:';?8'8LG8:78@C8B'7@'5;8'C<E:8'<>'5;87:'J<:I$ 5' ;87A;5' 67I8'5;<8'>:<F'J;7C;'5;89'J<:I8B0'F858<:<6<A7C 6'C; @A8'<CCE:' J75;'5;8'A:8 58 5':G7B759'0?7<68@5'J7@B'<?8:5E:@8B'5;87:'7@ 5:E

F8@5 0 @B F7 5 ' <:' C6<EB ' C<@C8 68B 5678 G<7@5 ' 5 5;8 F<F8@5 ' 5;89 J7 ;8B 5< <= 8:?8 5;8F$ ' 7@A68 > C5 J766 A7?8 <F8 @<57<@ <>5;8@ 5E:8 <>5;87:' J<:I$ 8?8@ @A68 ' ; B 5< =8 F8 E:8B>:<F 5;8 EF F75 <> ' 86<E 80 0 1 '>885 =<?8 5;8 8 $;8 <= 8:?8: ' *K J;< J8:8 6<BA8B 7@' 5;8 C; 685 '<> ' 7<@B 0 ; B 5< C8@B 5< 5;8 EF F75 ><:' 8?8@ ECC8 7?8 B 9 0 @B 75 J ' 86B<F G< 7=68 5< FG E:8 5J< @A68 ' 7@ 5;8 F8 B 9$3

Z ;8 7FG<:5 @C8 W> 5;8 8 <= 8:? 57<@ ' 7 ' :8 B769 C<FG:8;8@B8B0 @B ' ; ?8 B8 C:7=8B 5;8F' 5 <F8 68@A5;0 =8C E 8 5;89><:F 5;8 = 8 <> 5;8 8@58:G:7 8$ @8 5;7@A 7 ' @<5 =68$ 5 7 ' 5;8 G8: <@ 6 C :8 5; 5 5;8 8@A7@88: ' ; ?8 5 I8@$ $ &: @B7 ' B7:8C58B 5;8 5: CD 7@A <> 5;8 67@80 5;8 5:7 @AE6 57<@0 @B 5;8 68?8667@A '0 ;8 7 58B 5 5;8 8<G8: 57<@ 0 ;8 868C58B 5;8 = 8 ' @B G<7@5 ' 5 J ;7C;" 7A@ 6 R J8:8 5< =8 G6 C8B0 @B 66 J 'B<@8 E@B8:' ;7 ' 898 =9 5;8 8@A7@88: 0 <:8667 0 <G866<0 866 0 @B <@B7@<$3

0 @ CC<E@5 <> 5;8 G8CE67 :' 75E 57<@ <> 5;8 8@B ' <> 5;8 5E@@860 5J< F 660 C<@@8C57@A0 CE:?8B 5E@@86 ' J766 ; ?8 5< =8 F B8$ Z ;8 C<@ 5:EC57<@ <> 5;8 8 58: F7@ 6 CE:?8 '7 ' @ 5E: 669 @8A68C58B><:' 5;8 8 5 =67 ; F8@5 <> 5;8 5J<> 6 8 F<E5; '7@ 5;8 B7:8C57<@ <> 5;8 A8@8: 6 67@8$3

Z ;8 68@A5;' =85J88@ 5;8 5J<> 6 8 F<E5; '7 ' Q0QQ R ' 5@85:8 $;8 8@5:9 <@ 5;8 7B8 <> 5 69 7 ' 5 ' ;87A;5 <> " ' g g g : @C8 g Q Q" Q

' 7>>8:8@C8 <> 68?86 Q"

;7 'B7>>8:8@C8 <> 68?86 7 ' <?8:C<F8 =9 'A: B78@5 <> QQQ 7@ 0 0 J;7C;' :7 8 '>:<F 5;8 4:8@C;' 8@5:9 5< 5;8 C8@5:8P $ $ $ h 2 ' A: B78@5 <> ' 7@ Q 0 J;7C;' :7 8 '>:<F 5;8 5 67 @ 8@5:9 5< 5;8 C8@5:8P h '

Q

P ;8 EF F75 J766 =8 '>8J'>885 ;7A;8:' 5; @ $ <@58 5 58 0 5;8 A: B78@5 '; ?7@A' =88@ 7@C:8 $ 8B 7@C8 5;8 C<F F8@C8F8@5 <> 5;8 J<:I $ $

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Z 5' 7 f =8 7B8 f 8#EB8@5' 5; 5' B:7?7@A' 5;8' 5E@@86' 5<' ' EF F75' B<E=68 ' 5;8' C; @C8 ' <>' 5;8' 5J<' 8@B ' F8857@Af @B' @8A 57?8 f 5<' ' C8:5 7@' 8L58@50f 5;8' G< 7=767578 ' <>' 8::<:' >:<F' 5;8' 5J<' <G8: 57<@ ' EG<@' J ;7C;' 5;8' 68 5' B8G8@B8@C8' C<E6B' =8' G6 C8B0K 5;8' 5:7 @AE6 D 57<@' @B' 5;8' 68?8667@A$:<?7B8B' 5; 5' 5;8' 5J<' L8 ' :8' 7@' 5;8' F8' B7:8C57<@f 5;89' FE 5' F885' <<@8:' <:' 6 58:f J;85;8:' 5;7 ' ; GG8@ ' ' >8J'9 :B ' F<:8' 5<' 5;8' @<:5;' <:' 5<' 5;8' <E5;'7 ' <>' @<' 7FG<:5 @C8$3P P' 5' 5;8' C<F F8@C8F8@5' <>' 5;8' 5E@@86' 7@' 1f 5;8:8' J ' @<' CD C<F F<B 57<@' 5' 875;8:' 8@B' ><:' 5;< 8' 8FG6<98B' <@' 5;8' J<:I ' f @B' ><:' ' 6<@A' 57F8' =<5;' 8@A7@88: ' @B' J<:IF8@' ; B' 5<' E=F75' 5<' @EF8:<E ' G:7? 57<@ $ < B ' ; B' 5<' =8' F B8f @B' = :: CI ' 5<' =8' 8:8C58B' f <@8' >58:' @<5;8:f ;<E 8 ' @B' ;<G ' J8:8' BB8Bf @B' 5' 5;8' G:8 8@5' 57F8' 5;8' 5E@@86 =E76B7@A ' 6<@8' ><::@' C<@ 7B8: =68' ?766 A8 ' 5' 5;8' 5J<' 8@B $R"

;8'+ 75E 57<@ ' <>' 5;8' 5J<' F<E5; ' :8' 8 8@57 669' B7>>8:8@5' >:<F' 8 C;' <5;8:$; 5' 5' :B<@@+C;8' C<F8 ' <E5' 5' 5;8' =<55<F' <>' 5;8' ? 6689' <>' +<C;8F</8 'f 5; 5' 5' 4<E:@8 EL' ' >885' =<?8' 5;8' 8@7 ' :< B$ 5' 5;8' 6 558:' 8@B' 5;8' B8=:7 ' ; ' =88@' ;<5' <E5' 5' 5;8' F<E5;' B<J@' 5;8' F<E@5 7@ 7B8' f @Bf 6 :A8' ' 5;8' 57G' M7@' 5;8' 6 @AE A8' <>

P' <@58$ & '& ' ' 1 ') G ' ' ' ' $ 2 ! ' 2$ 5' 5' 7 ' E>>7C78@5' 5<' 7@B7C 58' 5;< 8' 5' :B<@@ C;8' <@69$;8' G:7@C7G 6' <@8 ' :8' [$ 6< 8' 5<' 5;8' 5E@@86 F<E5;' K'6<BA7@A ' ><:' 5;8' F7@8: f 5;8' G:7@C7G 6' 5<:8;<E 8 f 5 =68 f ><:A8 ' ><:' :8G 7:7@A' 5;e' B:766 $ Q$ 5' :B<@@8C;8f ; 6> F768' B7 5 @5' >:<F' 5;8' F<E5;' K'6 :A8' = :: CI ' ><:' 5;8' J<:IF8@' f 7L' <5;8:' =E76B7@A ' ><:' J<:IF8@' f <@8' ;<E 8' ><:' <5;8:' 8FG6<988 ' f :8G 7:7@A ;<G ' ><:' 5;8' F C;7@8:9f 5<:8;<E 8 f ' ><E@B:9f 5;8' =E76B7@A' C<@5 7@7@A' 5;8' Z'C<FG:8 8E:' ;' C;<C0'3 @B' 5;8' :8 8:?<7:' ><:' >88B7@A' 5;8' F8' f 'A J<:I ' f '=E76B7@A' C<@5 7@7@A' @' 7@>7:F :9f J ;;<E 8 f 85C$f 5J<' =E76B7@A ' ><:' Z C<FG:8 8E:' ' G<F G80'3' <@8' =E76B7@A' ><:' @8J' :8 8:?<7:' <>' C<FG:8 8B' 7:f ' C E57@C' @B' ' G<:58:R'6<BA8$ @' 8@E F8: 57<@' <>' 5;8' =E76B7@A ' 5' 4<E:@C EL' M <B @8N' J<E6B' =8' @8 :69' ' :8G85757<@' <>' 5;8' =<?8$

@ ??78 N E@B<E=58B69 7 0 75 7 ' B7>>7CE65 5< =8678?8 <@8 88 ' /' 5 ; 8
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J ; 7C ;' B8=:7 ' J766 5 @B$ 5 ' > C8 ' ; ?80 ' @8 :69 ' G< 7=680 @
@A68 <> 2 $`

' E:7@A ><E:' 98 : ' 5 ; 8 <:B7@ :9 F 8 @ ' <> 8LC ? 57<@ J 8:8 6<@8
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F C ; 7@8 ' J 8:8 =87@A C<@ 5:EC58B J ; 7C ;' J 8:8 B8 57@8B 5< EG8: 8B8
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J 8:8 E C78@569 C<FG6858 5< =8 GE5 5< J<: I @B 7@ 5 ; 8 EF F 8:' <>
5 ; 5 98 :' ' J 8@5 5< :B<@@8C ; 8 5< 88 5 ; 8 F ' 7@ <G8: 57<@$P

; 8 C6<C I ' <> 5 ; 8 E6L ; B !E 5 5:EC I ' 5J 86?8 <@ 5 ; 8 @7A ; 5 <>
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; 89 J 8:8 8LG8:7F 8@57@A J 75 ;' <@8 <> ; 7 ' > F<E ' Z G8:><: 5:7C8 03
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P @' 5678 G:8?7<E ' 98 :' ' ; B' ?7 758B <B @80 @B' > ?<E:8B =9 7@5:<BEC57<@ ' >:<F'
$;$ = >7558 5 5 ; 5 57F 8 :8 7B8@5 <> 5 ; 8 (7C5<:' F F @E86 76J 90 ; B' ; 88@'
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G7G8 <> 68 5;8:' MCN 7 ' 8CE:8B 5< 5;8 C;88I =9 F8 @ ' <> ' F85 6 J ;8:0 @B0 G:8 8B B<J@ =9 5;8 C<FG:8 8B 7:' <@ 5;8 8@B <> 5;8 <:B7@ :9 G7G80 F I8 ' 5;8 !<7@5 E>>7C7D 8@569 7: 57A;50 65;<EA;' 75 B<8 ' @<5 ;7@B8:' 5;8 B? @C8 <:' 5;8 :85:8 5 <> 5;8 G7G8$ @ 5;8 5E@@86 75 86> K J;8:85;8 58FG8: 5E:8 7 ' @<5 E=D !8C5 5< EC;' >6EC5?7 57<@ ' K 5;8 8 G:8C E57<@ ' :8 @<5 @8C8 :90 @B 5;8 ' G7G8 ' :8 C ::78B 6<@A 5;8 J 66 0 EGG<:58B =9 =: CI85 0 ' > :' ' 5;8 8@B <> 5;8 >7@7 ;8B J<:I$;:<EA;' 5;8 8 G7G8 ' ;7A;69 C<FG:8 8B 7:' 7 ' C<@BEC58B0 @B 7 ' B867?8:8B 5 5;8 8@B <> 5;8 Z B? @C8B A 668:93 J;8:8 5;8 =<:7@A F C;7@8 ' :8 5 J<:I0 J75;' <@69 ' 67A;5 B7F7@E57<@ 7@ 75 'G:8 E:80 @<5J75; 5 @B7@A 5;8 8 C G8 ' J;7C;' <CCE:' 5 5;8 !<7@5 $

@ 8@58:7@A 5;8 5E@@86 <@8 7 ' 5:ECI =9 75 ' 7S8$;8" 5 67 @ 0 J75;' ' F A@7>7C8@5 B7 :8A :B <> 8LG8@ 80 <:' >:<F :8A :B 5< 5;8 >E5E:80 ; ?8 C<@ 5:EC58B 75 @<5 <@69 J75;' 5J< G 7: ' <> : 76 0P =E5 J75;' '><<5G 5;' <@ 8 C;' 7B8$ 4:<F 5;8 : 76 ' 5< 5;8 C:<J@ <> 5678 :C;' 75 ' ;87A;5 7 ' !E 5 Q ' >885 @B 75 ' J7B5;' 7 ' Q ' >885 ' 7@C;8 $;8 @8L5 5;7@A 5; 5 7 ' @<57C8B ' 5; 5 75 7 ' 6F< 5 8?8:9J;8:8 67@8B J75;' F <G:90 ' F 66 >: C57<@ <@69 <> 5;8 :<CI ' 68>5 E@ EGG<:58B$;8 5<@8 5; 5 7 ' E 8B 7 ' @<5 <=5 7@8B >:<F 5;8 5E@@86 75 86>0 =E5 7 ' HE ::78B 8?8: 6 F768 ' J 90 @8 :' 5< 5$ 7C;86$5 %<5 <= 8:?8B0

P ;8 67@8 ' J;7C6 J766 C<@@8C5 75 J75;' 8L7 57@A : 76J 9+ :8 5< ;8 <@69 7@A68 67@8 $

5 8:80 @B 7@ 5;8 E= 8HE8@5 G A8 0 5;8 4:8@C;' 7B8 7 ' 6<@8 :8>8::8B 5<0 E@68$ ' 75 7 ' <5;8:J7 8 G8C7>78B 0 ;E5 5;8 B8 C:7G57<@ J<E6B 8:?8 6F< 5 8HE 669 ><:' 5;8 5 67 @ 7B8$

=E5' @8?8:5;868 ' 8L7 57@A0'7 ' ' C<?8:8B' J 9' =<E5' ' >885' 2' 7@C;8 ' ;7A;0' @B' 2' >885' J7B80' J;7C;' 7 ' F B8' 7@' 5;8' >6<<:' <>' 5;8' 5E@@86

669' 7@58@B8B$' @' 5;8' 6<5;'<>' 8G58F=8:' 0' ' EBB8@'> 66'<>':<CI' <CCE::8B0' J;7C;' I7668B' 8?8: 6' F7@8: ' @B'7FG:7 <@8B' =<E5' 7L59'<5;8: ' J;<' J8:8' 5' J<:I' 7@'5;8' B? @C8B'A 668:9$' ;89' J8:8'A:8 569' 6 :F8B0' @B'8LG8C58B' 5<' =8' 5 :?8B'0 =E5' 5' 6 5' <@8'<>'5;8F':8F8F=8:8B'5;7 ' E=J 90' 66@B'5;89' 8 C G8B' =9' 75 ' F8 @ $' 7@C8'5; 5' 57F8' 5;8' F7@8: 0' I@<J7@A'5;89' ; ?8'5;7 ' 8L750' ; ?8'5:<E=68B'5;8F 86?8 ' ?8:9'675568' =<E5'8=<E68@78@5 $

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9 :B$=9$9 :B0 7@$5;8$ F8$G:<G<:57<@$ '75$B<8 'J;8@$ ''7@5<$ 5;8$8 :5;0 5;8$58FG8: 5E:8$7@'75 'C8@5:8$;<E6B$;8$ =<E5$ ^;7A;8:$ 5; @$ 5'75 'F<E5;$ 65;<EA;'75'7 'I@<J@$5; 5'5;8$: 58$<>$7@C:8 8$ 7 '?8:9$FEC;'68 '5; @$5;7 0 5;8$ C5E 6 : 58$7 '@<5$ I@<J@$ ' =8678?8$75'7 'C<::8C5 5<$ 9$5; 5' @<5$ ' 7@A68$ <= 8:? 57<@$; ' =88@$ F B8$EG<@$5;8$ @ 5E: 6 58FG8: 5E:8$<>$5;8$:<CI' 7@C8$5;8$5E@@86 ; ' =88@$C<FF8@C8B$ 4<E: >7>5; '<>$75' :8$@<J'B:7?8@$;8$<GG<:D 5E@759$><:$<= 87J 57<@$; '=88@$6< 50><:0 G :5>:<F'5;8$C<<67@A$J;7C;' FE 5'7@8?75 =69$; ?8$5 I8@$G6 C80 6F< 5'5;8$J;<68$<>$5;8$5E@@86; ' =88@$67@8B$J75;'F <@:90 @B$75'7 '@<5$5<$=8$8LG8C58B$5; 5' @9$ G8: <@0 <:$ @9$=<B9$<>$G8: <@0 J766$7@CE:$5;8$8LG8@ 80 8?8@$7>'5;89$ J8:8$G8:F7558B0<>$:8F<?7@A$5;7 0 @B$5;8@$F I7@A$5;8$@8C8 :9$;<68 $ 5'7'5<$=8$;<G8B$5; 5' <F8$<= 8:? 57<@'J766$=8$F B8$<@$5;8$:8F 7@7@A$G<:57<@0><:$ 7F76 :$ <GG<:5E@7578' :8$@<5$67I869$5<$<CCE:$?8:9$>:8HE8@569$

=<E5$Q '>885$<@$5;8$4:8@C;'7B8$<>$5;8$5E@@86$J 'E@B8:D A<7@A$5;8$G:<C8 8'<>$8@6 :A8F8@5$ @B$C<FG6857<@$7@$5;8$EFF8:$ <>$ P @$ <F8$G6 C8'G<:57<@''<>$5;8$B? @C8B$A 668:9$:8F 7@8B$ E@5<EC;8B0 @B$5;8@'<@8$C F8$5<$C ?8:@0 EC;' '; ?8$=88@$B8 C:7=8B$ =<?8$;7' 8C57<@$J '=87@A$C<FG6858B$> 58:$5; @$5;8$ B? @C8B$ A 668:9$PJ '=87@A$B:7?8@$ 5$J 'G68 @5$5<$A85$J 9$>:<F$75$ > :5;8:$7@5<$5;8$=<J86'<>$5;8$F<E@5 7@0 5;8$;8 5$=8C F8$68 0 @B$ 5;8$5F< G;8:8$F<:8$GE:8$;8$@<7 8$<>$5;80; FF8:'B78B$A:' PBE 669$J 90 @B$5'6 5'@<$<E@B$J; 58?8:$C<E6B$=8$;8 :B0 8LC8G5$ <>$<E:$<J@'><<5 58G' @B$<>$J 58:$:E@@7@A$7@$5;8$E=J 9$ >58:$' 57F8$5;8$= @A7@A$<>$5;8$C;7 86'C<E6B$=8$B7 57@AE7 ;8B$J;7C;$J8:8 5$J<:I$<@$5;8$>:<@5$<>$5;8$55 CI$ 47?8$;E@B:8B$G C8'5<<I$E'5<$ 5;8F$5 ;8$G<@B8:<E'>: F80 58C;@7C 669$C 668B$Z R >>E503 EGD G<:58B$@7@8$<>$5;8$F C;7@8'I@<J@$ 'ZG8:><: 5:7C8'03 8 C;$G8:' ><: 5:7C8$G:<G8668B$ '=<:7@A :<B0 @B$8 C;$=<:7@A :<B$) '5:7I7@A$ 5;8$:<CI' 5'5;8$: 58$<>$Q ' 5:<I8'G8:$F7@E580 J75;' '><:C8$<>$Q

P ;8$F<@5;69$B? @C8'J;7C;$:8$<F857F8'HE<58B$7@$ @A67 ;'@8J G G8:''>8>8:$ 5<$5;8$B? @C8B$A 668:90@<5$5<$5;8$>7@7 ;8B$J<:I$

5' @$ BB757<@$5<$5;8$Q '>885$<>$E@>7@7 ;8B$J<:I'F8@57<@8B$ =<?8$

G<E@B $P' ;8' 58: :7>7C' B7@' 5 ; 5' 5 ; 8 8' ' 5:<I8 ' G8:' F7@E58@ A7?8@' J75 ;' EC ;' ><:C8@ F I8' 7@' ' :<C I C ; F=8:' 5 ; 5' 7 ' <@69' ' >5$ ' 7@$;7A ;@ @B' ' >5$ Q f' 7@$ J7B8@ C @' ; :B69' =8' 7F A7@8B@ @875 ; 8:' C @' @' B8HE 58' 7B8 ' =8' A7?8@' <>' 5 ; 8' BF7: =68' F @@8:' 7@' J ; 7C ;' 5 ; 8' F C ; 7@8 ' CC<FG67 ;' 5 ; 87:' J<: I$ @' G758' <>' 5 ; 8' @<7 8' @B' 5 ; 8' C: FG8B' G< 757<@' 7@' J ; 7C ;' 5 ; 8' F8@' @8C8 :769' 5<76' <@' CC<E@5' <>' 5 ; 8' 67F758B' G C8@ 5 ; 8' J<: I' A<8 ' 58 B769' ><: J :B' B 9' @B' @7A ; 5$ C ;' F @' I@<J ' ;7 ' G :5$;8' ><:8F8@' B7:8C5' =9' 7A@ ' : 5 ; 8:' 5 ; @' =9' J<:B @ 5 ; 8' 6 =<E:8: ' AE7B8' 5 ; 8' C ; 7 86 @ 5 ; 8' J<: I F8@' :8AE6 58' 5 ; 8' EGG69' <>' 7:@ 5 ; 8' F C ; 7@7 5 ' :8' :8 B9' 7@' C 8' <>' CC7B8@50 67F' =<9 @ J75 ;' 6<@A @< 8B' C @ @ <76' 5 ; 8' F C ; 7@8:9$:B8:' 5:7EFG ; ' 7@' 5 ; 8' F7B 5' <>' GG :8@5' C<@>E 7<@$ @8' 88 ' @<J' 5 ; 8' :8 E65 ' <>' 98 : ' <>' G8:>8C57@A' @B' <>' G: C57C8$;7@A ' J8:8' ?8:9' B7>>8:8@5' 5' 5 ; 8' =8A7@@7@A$;8@@ 9 ' $ <@58@ Z'8?8:95 ; 7@A' J ' @8J@ @<5' <@69' 5<' 5 ; 8' J<: I F8@@ =E5' 6 <' 5<' 5 ; < 8' J ;<' ; B' 5 ; 8' B7:8C57<@$ $ $ $;8' J<: I' <>' G8:><: 57<@' J ' C<F F8@C8B' 5 :B<@@ C ;8' <@' . @E :9' Q@ @ =E5' ><:' 8?8: 6' B 9 ' <@69' ' 7@A68' G8:><: 5:7C8' J '7@' C57<@@ 5 ; 8@' ' 8C<@B' J ' BB8B@ @B' =9' 5 ; 8' Q 5 ;' ' C8:5 7@' F<E@5' <>' E 8>E6' J<: I' ; B' =88@' B<@8$ @' 5 ; 8' Q 5 ;' 5 ; 8' @EF=8:' <>' 5 ; 8' G8:><: 5:7C8 ' J '7@C:8 8B' 5<' ><E:@ @B' =9' J<: I7@A' 87A ; 5' ;<E: ' G8:' B 9@ ' <:' Q' ;<68 ' J8:8' F B8' F=<E5' 9 :B' 7@' B8G5 ; $ @' 5 ; 8' Q5 ;' <>' 8=:E :9' 5 ; 89' ; B' G8:>8C58B' =<E5' Q' 9 :B ' <>' 5 ; 8' B? @C8B' A 668:9@ J ; 7C ;' ; B' =88@' 68>5' E@>7@7 ;8B@ @B' 5 ; 8@' ::7?8B' 5' 5 ; 8' >:<@5"<>' 5 ; 8' 55 CI$;8' J ;<68' B7>>7CE6500+' J '5 ; 8:8$;8' @EF=8:' <>' 5 ; 8' F C ; 7@8 ' J ' A 7@' 7@C:8 8B@ =E5' BE:7@A' 58@' B 9 ' 5 ; 8:8' J '675568' :8 E65$ @' 5 ; 8' QQB' 48=:E :9' 5 ; 8' J<: I ' J8:8' E G8@B8B@ 7@' <:B8:' 5<' F I8' 658: 57<@ P' EAA8 58B' =9' 8LG8:78@C8' @ @B' 75' J ' :8C<FF8@C8B' <@' 5 ; 8' QB' <>' :C ;$ 'E:7@A' 5 ; 8' >7: 5' ; 6>' <>' 5 ; 7 ' F<@5 ;' @' B? @C8' <>' ; 6> F85:8' J ' CC<FD G67 ;8B' 7@' 5J<' B 9 @ =9' J<: I7@A' 8?8@' ;<E: ' B 9@ =E5' 5<J :B ' 5 ; 8' 8@B' <>' 5 ; 8' F<@5 ;' 5 ; 8' J<: I' ; B' =8C<F8' F<:8' 8 9@ @B' 75' J ' G< 7=68' 5<$G8:><: F' 5 ; 8' J ;<68' <>' 5 ; 8' <G8: 57<@' 7@' ' 7@A68' B 9@ @B' 5<' <=5 7@' ' B 769' B? @C8' <>' ' 7@C ; 8 ' 5<' 5J<' >885$3

P' ;8' G8:><: 5:7C8 ' :8' 7@B8G8@B8@5' F C ; 7@8 @ @B' <@8' C @' ; 8' 5<G!78B' <:' :8F<?8B' J75 ;<E5' ::8 57@A' 5 ; 8' G:<A:8$ ' <>' 5 ; 8' <5 ; 8: $

6# *! %)) *( ) !' ' ' >?

Z @' G:76@ 5;8' 7FG:<?8F8@85 ' 7@5:<BEC8B@ @B' 5;8' G: C57C8' CHE7:8B@C E 8B' =8558:' G:<A:8 @ @B' 7@' 5;8' F7BB68' <>' 5;8' F<@5;' 5;8' J<:I' <>'G8:><: 57<@' J ' CC<FG67 ;8B' 7@' 87A;5' <:' @7@8' ;<E: $3

Z @' 5;8' F<@5;' <>' 9@ J;8@' @7@8'G8:><: 5:7C8 ' J8:8' 5'68@A5;' 5' J<:I@ G:<A:8 ' J ' 5<GG8B' =9' 8L58:7<:' C E 8 @ @B' J ' E D G8@B8B' ><:'5J<' F<@5; $3

Z4:<F' .E69'5<'5;8' 5;' <>' EAE 5'5;8' J<:I' J ' C<@57@E8B@ =E5' <@69' <@8' 55 CI' G8:' B 9' J ' F B8@ <@' CC<E@5' <>'5;8:8' @<5' =87@A' ' E>>7C78@5' @EF=8:' <>'7@ 5:EC58B' G8: <@ ' 5<' C ::9' <@' 5;8' J<:I'7@C8 @569$ 576'75' J ' C ::78B' <@' J75;' :8AE6 :759@ @B'5;8' B? @C8' J ' Q ' 7@C;8 ' 5<' ' >885' G8:' B 9$;8' G8:><: 57<@' J ' A8@8: 669' CC<FG67 ;8B'7@' 7L' ;<E: $3

Z4:<F'5;8' 5;' <>' EAE 5'5;8' J<:I' J ' C<@57@E8B' B 9' @B' @7A;5@' =E5' 5'>7: 5@7@' C<@ 8HE8@C8' <>'5;8' 7@8LG8:78@C8' <>' <FG' <>' 5;8' 8FG6<988 @ 5;8' B8G5;' <>' 5;8' ;<68 ' ; B' 5<' =8' :8BEC8B' 5<' 5J<' >885@ @B' 5; 5' B8G5;' <CCEG78B' 5;8F' 5J86?8' ;<E: $ 75568' =9'675568' 5;7 ' >:8 ;' = @B' <>' J<:IF8@' =8C F8' ' I76>E6 ' 5;8' >7: 5@ @B' 5' 5;8' 8@B' <>'5J<' F<@5; ' 5;8' 5J<' 55 CI ' J8:8' C ::78B' <@' J75;' :8AE6 :759$3P

;8' =8 5'><:F' <>'=<:7@A :<B' ><:' 66' I7@B ' <>' :<CI@ 8LC8G57@A' EC;' ' :8' ;<F<A8@8<E @ J ' ;75' EG<@' 7@' @ @B' 75' ; ' =88@' 7@' E 8' 8?8:' 7@C8$;8' ;8 B' 7 ' 7@' 5;8' ><:F' <>' ' V$ 4<:' ;<F<A8@8<E

P' @' 5;8' 5 67 @' 7B8@ 7@' <:B8:'5<' B? @C8' ' F55:8' 0K

Q$ $

Q ' ;<68 @ 8 C;' +'5<' Q' 7@C;8 ' 7@' B8G5;@ ' ;<68 @ ' 7@C;8 ' B88G@ J8:8' =<:8B$

; "B5<' =8' =<:8B$ 2.' 6= $ <>'G<JB8:' J8:8' C<@ EF8B$

' 6= $ <>'G<JB8:')8:8' C<@ EF8B$ Q ' F85:8 ' <>' F 5C;$

Q ' F85:8 ' <>' F 5C;$ ' B:766 ' J8:8' E 8B' EG$

' B:766 ' J8:8' GE5' $ ' ' 3

@' 5;8' 4:8@C;' 7B8@ 7@' <:B8:'5<' B? @C8' ' F55:8'

$

' ;<68 @ 2' 7@C;8 ' B88G@ J8:8' =<:8B$

Q f 6= $ <>'G<JB8:' J8:8' C<@ EF8B$

Q ' F;5:8 ' <>' F 5C;$

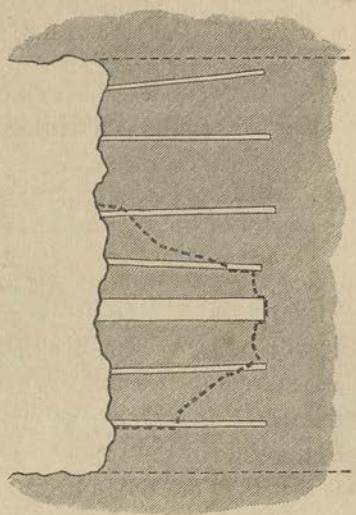
' B:766 ' J8:8' E 8B' EG$

1 ! "(!' ! ' 4 ' (! %' '

:<CI 5;8 <:B7@ :9><:F <C;7 86 7 '><E@B =8 5 6F< 5 66 5;8 B85 76 ' <5;8 F C;7@8:90 5;8 7S8 <5;8 A 668:90 5;8 B7F8@ 7<@ ' @B @EF=8:<5;8 ;<68 @B 5;8 F @@8:<5>7:7@A 5;8F ; ?8 =88@ C; @A8B 7@C8 5;8 =8A7@@7@A0 5;8 A8@8: G:7@C7G68 ' 6<@8 :8F 7@ E@ 658:8B ;8 G:8 8@5 9 58F'7 ' '><66<J ' ;<68 2>7@C;8 '7@ B7 F858:7 ' F B8 5< ' B8G5;<5 =<E5 ' 9 :B 5<J :B ' 5;8 C8@5:8 <5 5;8 B:7>5 =E5 : 5;8:@8 :8:5<5;8 >6<<:5; @ 5< 5;8 :<<> 7>59 5< 7L59 ;<68 CC<:B7@A 5< C7:CEF 5 @C8 <5 68 ' B7 F858: =E5 <5 =<E5 8HE B8G5; :8 5;8@ B:7?8@7@5<5;8 :8F 7@B8:<5;8 > C8$

66 5;8 ;<68 ' :8 5;8@ B:78B @B C68 @8B =9 ' !85 <5 C<FG:8 8B 7:0 5;8 Z >>E5 3 7 ' J75;B: J@ =8;7@B 5:<@A 7:<@ =<E@B B<<: @B 7L <5;8 F 66 ;<68 ' @8 :8 5 5<5;8 6 :A8 :8 C; :A8B @B >7:8B$;8><:C8 <5;8 8LG6< 7<@ A<8 ' 7@"5;8 B7:8C57<@ <5 68 5 :8 7 5 @C80 5; 5 7 ' 5<J :B ' 5;8 C8@5: ;<680 @B ' =:8 C;'7 ' F B8 EC;' ' 7 ' 7@B7C 58B 7@5;8 6<@A75EB7@ 8C57<@ =9 5;8 5;7C I ' B<558B 67@8$;8 :8F 7@7@A ;<68 ' :8 5;8@ C; :A8B @B >7:8B 7@ 85 ' <5 7L <:87A;5 5 ' 57F80 5;< 8 @8 :8 5 5<5;8 =:8 C;' =87@A 8LG6<B8B >7: 5$;7 ' 9 58F ; ' =88@'><E@B F<:8 8C<@<F 7C 6 5; @'>7:7@A ' 6 :A8:'@EF=8:

of shots at one time. The waggons are then advanced, and the débris is cleared away; the two pairs of rails at the sides, shown in the cross section, are for waggonets, whose contents are afterwards transferred to large waggons. The "affût" is then again advanced. These operations are now repeated with unvarying regularity twice every day.



LONGITUDINAL SECTION OF THE END OF THE ADVANCED GALLERY.

The temperature at the working face of the advanced gallery is seldom higher than from 75° to 76°, and the atmosphere is as pure as can be desired, when the machines are at work.* This, it must be remembered, is notwithstanding the presence of more than thirty men,† and almost as many lamps, in a space about nine feet wide, eight high, and fifty long. The comparative lowness of the temperature is of course due to the expansion of the compressed air.

At the distance of a hundred and sixty paces, the sound of the machines could not be distinguished, and the atmosphere again gradually deteriorated as we approached the region which may, not improperly, be termed infernal. Once more we passed through the foul vapours and by the army of miners. Laborious as the work of these men undoubtedly is, it is lighter and far less dangerous than that of our coal-cutters. The heat, although it seems considerable to one coming from a lower temperature, is not excessive, and this may be inferred from seeing how few men

* The temperature is raised to 80° or 86° after the mines are exploded.

† 1 chef; 4 machinists; 2 master miners, who determine the direction of the holes; 8 labourers, who guide the boring-rods; 9 workmen, who look after the perforatrices; 5 boys; 8 labourers; 2 workmen, who keep up communication with the exterior,—in all, 39 persons.

:8 E@C6<5;8B$;89 J<:I :8 B769 8@<EAB7 ><:5 5;87:5 5;:88 >: @C B 90P @B 5 I8 5< 5;87:6 =<E:C;88:>E669 ?8:9 >8J IE6I8:
C @ =8 88@7@5;8 <@5 8@7 5E@@86 ;8 ><66<J7@A5 =68 ;<J =<J F 66 7 5;8 :7 I 5< 67>8$

$ $ &,. 0 %J;7C;; ?8<CCE::8B 5 5;8 + $ 1 1%
>:<F 5;8 C<F F8@C8F8@8 5 <>5;8 J<:I 5< EAE 5 [K

@ 7B8 5;8 E@@86$ E5 7B8 5;8 E@@86$
4:<F > 66 <>:<<I $ 4 66 >:<F ;87A;5 $ $ $ Q
CC7B8@5 >:<F J AA<@ $ 2 CC7B8@5 >:<F J AA<@ $ 2
:8F 5E:8 8LG6< 7<@ $ $ K Q LG6< 7<@ <> AE@G<JB8:$ K
<5 6 $

5 5?766 =8 88@>:<F 5;7 5; 5 <@8 ; 6> <> 5;8 > 5 6 CC7B8@5 ; ?8
:7 8@>:<F F8@ =87@A :E@<?8:=9 J AA<@ $;7 ; C;78>69 C<F8
>:<F 5;8 7F G< 7=76759 <> F I7@A 5;8 F7@8: J 6I <@5;8 ><<5J 9
5 5;8 7B8 <>5;8 5E@@86$;89 J766 J 6I <@5;8 : 76 $;8 :8 E65
7 5; 5 5;89 :8 @<5 E@>:8HE8@569 I7668B0 65;<EA;5;8 A:8 58 5 G:8D
C E57<@ :8 5 I8@ J75;5;8 J AA<@ B8 C8@B7@A J75;B8=:7 $;8
5<5 6 7 7@ 7A@7>7C @5 J;8@<@8YC<@ 7B8:5;8 @EF=8:<> F8@ 8@A A8B
@B 5;8 68@A5;<> 57F8 <?8:J;7C;75 7 G:8 B0 @B 75 C<FG :8
> ?<E: =69 J75;6F< 5 @9 <5;8:8@58:G:7 8 <> 7F76 :F A@75EB8$
;8 J AA<@ 6 B8@J75;B8=:7 :E@B<J@0 <@5;8 4:8@C;7B80 =9
5;87:<J@ J87A;50 <@ CC<E@5 <> 5;8 A: B78@50 @B < B7B 5;8 5:EC I
<@ J;7C;B8 C8@B8B J75;F 9 AE7B8K 5;8 C<E:58<E 8@A7@88:J;
B7:8C5 5;8 J<:I $ 4:8 ;:86 9 <> F7@8: J8:8 8@58:7@A0 @B 5;< 8
J;<F 5;89 :8678?8B J8:8 C<F7@A <E5 J75;5;87: :F :<E@B 8 C;
<5;8: R J 7 5 Z7@5;8 F @@8:<> C;<<6=<9 @B 6<?8: $3 ;8 7:
88F8B C;7669 0 65;<EA;75 J = :7A;5 EFF8: B 9 0 @B <E:
@< 5:76 0 ><:;<E: >58:68 ?7@A5;8 5E@@860 9786B8B EC;EGG678 <>
C :=<@ 5< EAA8 5 5; 5;8 F @E> C5E:8 <> C<FG:8 8B <<5
F7A;5 =8 G:<>75 =69 BB8B 5< 5;8 6:8 B9 @EF8:<E 7@BE 5:78 <>
5;8 J<:I $

P ;8 J<:IF8@7@5;8 B? @C8B A 668:9 :8C87?8 >?8 >: @C B 90 @B F 66
=<@E G8:F55:8 7>5;89 8LC88B C8:5 7@ >7L8B B7 5 @C8$

=<E5' ><E:' 5;<E @B' F8@' :8' @<J'8FG6<98B' <@' 5;8' 5E@@860P'
@B'5;89'C<FXN6858' 58@'5<' 868?8@'>885' 8?8:9'B 9$;8' ?8: A8'B 769
G:<A:8 ' <>' 5678' 6 5' >7?8' 98 : '7 '58@ >885' <@8' 7@C;$ C;' 9 :B' <>
G:<A:8 ' C< 5 ' 5' 5;8' G:8 8@5' 57F8' =<E5' Q 0' <:' !E 5' B<E=68' 5;8'
?8: A8' <>' : 76J 9'5E@@867@A' 7@' @A6 @B$5' ;8:8' :8' F @9'9 :B 0'
;<J8?8:0' J;7C;' ; ?8'C< 5'7@>7@7586 9' F<:8'5; @' Q ' G8:'9 :B$;8
J<:I'7 ' @<J' <' > :' B9F@88B'5; 5' 5;8'8@A7@88: 'C @ 8 57F 58' J75;
<F8'G:<= =76759'J; 5'5;8'5<5 6'8LG8@B75E:8' J766' F<E@5'5<$;89
G6 C8' 75' 5' 0 0 ' M QQ2' G8: 9 :BN0' J;7C; EF' 7@C6EB8

P @'5;8'4:8@B7' E68'5;89' :8'8FG6<98B' ><66<J ' M E=B7?7 7<@ ' :8' <F7558B' ><:
5678' I8' <>' =:8?759N' [K

M $N' @'5;8' B? @88B'A 668:9K
Ć !7E 5CE: 'R $ $ $
7@C:$ ' $ $ $ $ 2
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< 9 $$$$

5;8' 8LG8@ 8' <>' 5;8' J;<68' <>' 5;8' F C;7@8:9' @B' <>' 5;8' 8L58:7<:' J<:I $;7 ' F<E@5' B<8 ' @<5' 88F' 8L5: ? A @5' J;8@' J8' :8F8FD =8:' 5; 5'><:' 8?8:9' 9 :B' <>' B? @C8@8?8:' 68 K @B'>:8HE8@569' F<:8' K5; @' 8?8@59' CE=7C' 9 :B ' <>' :<CI' ; ?8' 5<' =8' 8LC ? 58B@' @B' 5<' =8' C ::78B' J 9' M 5'5;8' G:8 8@5'57F8N' ' B7 5 @C8' <>' 5;:88' F768 ' @ 5; 5' =<E5'5J8@59 >7?8' CE=7C' 9 :B ' <>' F <@:9' ; ?8' 5<' =8' =E765@' 5;8' 5<@8' ><:' J;7C;'7 ' C<@?898B' 5J86?8' F768 ' 7@' ' F<E@5 7@<E ' C<E@5:9' @ 5; 5' /' 5;8' F C;7@8:9' 8FG6<98B' ; ' =88@' C<@ 5:EC58B' @B' 7@?8@58B' 8LG:8 69' ><:' 5;8' 5E@@86@' @B' 5; 5' 5;8' C:8 57<@' <>' 5J<' F 66' 5<J@ ' ; ' =88@' @8C8 :9$

;8' 5: 5 ' J;7C;' ; ?8' =88@' G78:C8B' A:88' ?8:9' 57 > C5<:769' 7@' 5;87:' @ 5E:8' @B' 7@' 5;87:' 5;7CI@8 ' J75;'5;8'7@B7C 57<@ ' <>' 5;8' A8<6<D A7 5 $P' ;8' 8@A7@88: ' 5;8:8><:8' =8678?8' 5; 5' @<' A:8 58:' B7>>7CE6578 ' J7/' =8' 8@C<E@58:8B' 5; @' 5;< 8' J;7C;' ; ?8' =88@' <?8:C<F8$ 8 ' F :I =69'675568' J 58:' ; ' =88@' F85' J75;[5;8' F7@8:R ' B:8 B8B' 8@8F9' 88F ' 5<' ; ?8' >68B' =8><:8' 5;8' 8@A7@88:' J;<' ; ' E5767 8B' 75 ' G<J8:$ ' ; ?8' @<5' 8@58:8B' 7@5<' ' B8 C:7G57<@' <>' 5;8' F @@8:' 7@' J;7C;'5;7 ' ; ' =88@' CC<FG67 ;8B@' =8C E 8'75' ; ' =88@' >:8HE8@569' B<@8' =8><:8' 6 =E5' 5;8:8' 7 ' @<5;7@A' F<:8' 7@58:8 57@A' 7@' :8A :B' 5<' 5;8' 5E@@86' 5; @

P' =68' <>' 5;8' 5: 5 ' J C=' = :8' =88@' G78:C8B' <@' 5;8' 4:8@C;' 7B8' <>' 5;8' A:8 5 5E@@86' <>' 5;8' 6G [K'

| | | |

5678' J 9'7@' J C;'5;8' J 58' G<J8:'<>' @ 5E:8' ; ' =88@' GG;8B'><:'
5;8':8BEC57<@'<>'5;8'B7>>7CE6578'<>'5;8'E@B8:5 I7@A$' ;8:8'7'@<5'
7@A68' 58 F 8@A7@8'<@'5;8' J<:I'0 8?8:95;7@A'7'B<@8'J75;'C<F+'
G:8 8B' 7:0'<:';9';9B: E67C'G<J8:$

.E 5'<@8';6>'<>'5;8'5E@@86'J 'B:7?8@'5'5;8'8@B'<>' C5<=8:' 0'
>58:'F<:8'5; @'@7@8'98 :'<>'6 =<E:$' ;8'5;7:B'HE :58:'J '>7@7 ;8B'
=9'5;8'8@B'<>' $P' /@68 '8L5: <:B7@ :9'<= 5 C68' :8'8@C<E@58:8B0'
5;8'5J<'8@B'J766'G:<= =69'F885'7@'48=:E :9' 1'0>'=E5'75'J766'=8'
6<@A' >58:'5; 5'B 58'=8><:8'5;8'5E@@86'J766'=8'E 8B'><:'5: >>7C$X[

P' ;8' B? EC8B'A 668:9'<@69$

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2 $ Q
Q$ '
2 $ 2 $
$
Q2 $
1 $ '
$
Q$ '
1$ '
QQ $1 ' ==*=
Q2$ '
Q$ '
Q $
2Q$

<5 6' B? @C8' 5'X
:B<@@8C;8' Q$2

<5 6' BD
? @C8' 5' 2 Q $
<B @8$

<5 6' BD
? @C8' 5' 0 $2
=<5;'8@B

<5 6'68@A5;'<>'5;8'5E@@86' Q0QQ ' F85:8 $
8F 7@8B'5<';8'B:7?8@'%<?$' 0' 0' Q f' F85:8 $

88' GG8@B7L'><:'5;8'G:<A:8 '<>'5;8'J<:I' 7@C8'5;7'B 58$

0 ;8' : 76J 9' J;7C;' J766' C<@@8C5' 5;8' 5E@@86' J75;' 8L7 57@A'67@8'J766'=8'B7>>6'
CE65' @B'C< 569'J<:I 0' J75;'@EF8:<E'5E@@86$' @B'=:7BA8 $ 'A<<B'B8 6'<>'5;8';8 ?9'
J<:I'7'B<@8'<@'5;8'67@8'=85J88@' E ' @B' :B<@@8C;80' ;E5'<@'5;8'4:8@C;' 7B8'5;8'
J<:I' :8' 6F< 5'E@5<EC;8B$

) 766 5;8 5J< 8@B ' F885^ ;8 8@A7@88: ' :8 ' C<@>7B8@5 5; 5 5;89 J766$ @8 7FG<:5 @5 > C5 :8F 7@ ' 5< =8 G<7@58B <E5$;8 5J< 7B8 ' ; ?8 @<5 B? @C8B J75;' 8HE 6 : G7B759$ @ 5;8 5 ; @ 7B8 5;8 EF F75 7 ' @8 :69 A 7@8B K +=8><:8 5;8 8 G A8 ' :8 GE=67 ;8B 75 J766 ; ?8 =88@ G 8B 0 =E5 <@ 5;8 4:8@C;' 7B8 5;89 :8 @8 :69 Q ' 9 :B ' ;<:5 <> 75$;8 J<:I' 7 ' 5766 5< =8 C ::78B <@ 7FE6D 5 @8<E 69 @B C<@ 8HE8@569 <@ 5;8 5 67 @ 7B8 5;89 J766 ;<:569 ' ' ' ' $ <@58 F8@57<@8B@ 5; 5 <@8 <> 5;8 :8 <@ ' J;7C;' 7@>6E8@C8B 5;8 8@A7@88: ' 5< B:7?8 5;8 5E@@86 5< ' EF F75 J 0 5; 5 =9 < B<7@A 0 @9 8::<:' 7@' 5;8 B858:F7@ 57<@ <> 75 ' 68@A5;0 <:' 7@' 5;8 68?86 0 J<E6B =8 @8A 57?8B$ 5 J ' <@69 @8C8 :9 5; 5 5;8 5J< 8@B ' ;<E6B =8 B:7?8@ 7@ 5;8 F8 67@80K 5;89 J<E6B =8 E:8 5< F885 <<@8:' <:' 6 58:$;7 ' J ' <@' 5;8 EGG< 757<@ 5; 5 5;8 5J< A: B78@5 ' J<E6B =8 F 7@5 7@8B E@576 5;8 5J< 8@B ' F85$;8 J;<68 <> 5;7 ' B? @5 A8 7 ' A<7@A 5< =8 C:7>7C8B$ > 5;8:8 7 ' @9 F 58:7 6 8::<:' 7@' 5;8 B858:F7@ 57<@ <> 5;8 68@A5;' <:' <> 5;8 68?86 0 5;8 5J< 8@B ' F 9 @<5 F885$ @8 ; ' @<5 5< A< > :5;8:' 5; @ 5;8 EF F75 <> 5;8 <@5 8@7 ' G ' 75 86> 5< ;<J' 5; 5 8::<: ' F 9 C:88G 7@5< 5:7A<@<F85:7C 6 J<:I 0 8?8@ J;8@ 75 7 ' C<@BEC58B =9 B7 57@D AE7 ;8B 8@A7@88: $;8 ;87A;5 <> 5; 5 G ' ' =88@ <=5 7@8B =9 5J< 7@B8G8@B8@5 E:?89 ' 0 <@80 C ::78B 5;:<EA;' 4: @C8 >:<F' 5;8 68?86 <> 5;8 +8 0 @B 5;8 <5;8:' C ::78B 5;:<EA;' 5 69 >:<F' 5;8 68?86 <> 5;8 8 ' 0 985 5;8 5 ; @ ' F I8 5;8 EF F75 ' >885 ;7A;8:' 5; @ 5;8 4:8@C;$ P

) ;8@ 5;8 A:8 5 5E@@86 <> 5;8 6G ' 7 ' C<FG6858B0 J766 75 =8 ' E 868 ' F :?86^ <:' J766 6<C<F<57?8 ' =8 =68 5< J<:I' 7@ 75^) 766 5;8 5: 7@ ' ::7?8 5 5;8 8@B ' JB5;' C :A<8 ' <> G;9L7 58B G 8@A8: ' J;< J766 ; ?8 5< =8 :897?8B J75;' B: EA;5 ' <> C<FG:8 8B 7:' ^ <:' J766 5;8:8 =8 @< 5:<E=68 <@ CC<E@5 <> ?8@576 57<@' ^ 5 FE 5 @<5 =8 :A7:8B 5; 5 =8C E 8 75 7 ' 7FG< 7=68 ><:' 6<C<F<57?8 ' 5< J<:I' 7@ 5;8 5E@@86 5 G:8 8@50 75 J>76 =8 7FG< 7=68 ><:' 5;8F' 5< J<:I' 7@ 75 J;8@ 75 7 ' C<FG6858B$;8 58FG8:5E:8 ' <> 5;8 5J< 7B8 ' J766 >:8D HE8@569 =8 B7>>8:8@50 @B 5; 5 6<@8 J766 G:<BEC8 C<@ 7B8: =68

<E:' C< 6 >786B 0 J ;7C ;' :8C8@5 7@HE7:78 ' ; ?8' G6 C8B' 5' ' F<:8' B7 5 @5' B 58' 5; @' J ' 8LG8C58B' ' >8 J' 98 : ' A<0 7 ' '5 ;7@A' 5; 5' 7 ' 7@8?75 =68' <<@8:' <:' 6 58:$ C5E 6' 8L; E 57<@' 7 ' @<5' <' FEC;' 5<' =8' >8 :8B' ' 7@ =76759' 5<' 0C< FG858' J75;' ><:87A@' G:<BEC8: $;8' HE8 57<@' 7 ' B!<E:@8B0 =E5' 75' J766' G:8 8@569' =8' ><:C8B' EG<@' GE=67C' 558@57<@' A 7@$) ;8@' 75' =8C<F8 ' 5<<' G:8 7@A' 5<' =8' @8A68C58B0 5;8@0 G< 7=690 5;8:8' J766' =8' ' C; @C8' <>' 5;8' C<@B757<@' <>' <E:' F7@8: ' =87@A' F867<: 58B0 =E5' 75' 7 ' 7FG:<= =68' <' 6<@A' ' A7A @57C' GE=67C' E= C:7G57<@ ' G 9' ><:' 5;8' 8>>8C5 ' <>' G:7? 58' @8A68C50 J ;7C ;' C5E 669' 58@B' 5<' G8:G85E 58' J; 5' 5;89' :8' 7@58@B8B' 5<' CE:80 5; 5' 5;8' C;78>' 7@@8: ' J766' 5 I8' G:<G8:' C57<@$) ;8@' 5;89' 5 I8' 6 :F0 5;8@' G8:D ; G ' 5;8:8' J766' =8' 6? 57<@' ><:' 5;8' G75F8@$;8' > C5' 5; 5' 5J<' ;E@B:8B' <>' 5;87:' F8@' 6< 8' 5;87:' 67?8 ' 8?8:9' 98 :' =9' >7:8 B FG' 8LG6< 7<@ ' J766'@<5' F<?8' :757 ;'G75 <J@8: ' <' :8 B769' '5;8' B7 A:88D =68' 5:E5;' 5; 5' 5;8' 57F8' 7 ' : G7B69' GG:< C;7@A' J ;8@' 5;89' J766' =8' E@ =68' 5<' C<FG858' J75;'><:87A@' F :I85 0E@68 '5;89' J<:I' J75;'A:8 58:' 8C<@<F9$) 8' ; ?8' ;8 :B' 57F8 ' J75;<E5' @EF=8:' 5; 5' F7@8: ' :8' C :868 '0 5; 5' 5;89' 9 ' F<I8' 5;87:' G7G8 ' J ;8:8' 5;89' <EA ;5' @<50 5; 5' 5;89' 9 ' C ::9' ><:=7BB8@' F 5C;8 0 <:' 8?8@' =:8 I' <G8@' 5;87:' >859 6 FG ' 5<' A85' '67A;5$ 5' 7 ' E 868 ' 5<' C<F= 5 EC;' ; =75 ' =9' :8G:8 7?8' 8@ C5F8@5 0 @B' C;76B7 ;'5<' 5 6I' <>' B<E=68 6<CI7@A' 6 FG ' =8C E 8' 7@A68 6<CI8B' <@8 ' :8' ><E@B' 7@8>>8C5E 6$;8' F<:8' B7>>7D CE659' 5;8:8' 7 ' 7@' <=5 7@7@A' ' 67A;50' 5;8' F<:8' F8@' J766' 5:EAA68' 5<' A85' <@8$;8' <@69' J 9' 5<' G:8?8@5' 8LG6< 7<@ ' 7 ' 5<' :8@B8:' 5;8@^' 7FG< 7=680 @B' 5; 5' C @' =8' CC<FG67 ;8B0 5<' ' 6 :A8' 8L58@5' 5' 68 50 =9' =8558:' ?8@>86 57<@$ < 6' C @' =8' A<5' F<:8' 8C<@<F7C 669' @B' 5;8' ?8@576 57<@' C @' =8' 7FG:<?8B0 =9' 5;8' E 8' <>' <@8' @B' 5;8' F8' F8 @ $ 58 F' F C;7@8:9' C @@<5' =8' E 8B' 7@' C< 6 G75 ' ><:' 5;8' F8' :8 <@' 5; 5' 75' C<E6B' @<5' 7@' 5;8' A:8 5' 5E@@86' <>' 5;8' 6G ' 0 =E5' F C;7@8 ' F<?8B'=9' C<FG:8 8B' 7:' C @$ ' F C;7@8' ><:' C< 6 CE557@A' J<:I8B' ;9' C<FG:8 8B' 7:' J ' G 58@58B' <' 6<@A' A<' ' 0 @B' ; ' =88@' ECC8 >E669' 5' J<:I' 7@' ' G75' 7@' <:I ;7:8' P' ><:' $6<@A' 57F8$ 5 ' C57<@' 7 ' @' 7F75 57<@' <>' 5; 5' <>' 5;8' F7@8:R ' G7C I' 0 75' CE5

P ;8') 8 5' :B 689$

G @9 <> ' C<EG68 <> @79 C<E@5:9F8@ 5< @9 @EF=8: <> AE7B8 $ @ J8: 5< 7@HE7:78 ' 5 ; 5766<@ ' 8:78 ' <> F8@ C F8 >< : J :B J ;< 8 > C8 ' 8LG:8 8B F 67C8 G:7B8 8@?9 ; 5:8B @B :<AE8:9 <> 8?8:9 B8 C:7G57<@ =E5 ' J ;< 88@78B 5< =8 B8 575E58 <> /' A<<B HE 67578 $;8 ::7? 6 <> 5J< A8@568F8@ J75;' ' AE7B8 J ;< 5;89 :8G:8 8@58B) ' 5;8 8F=<B7F8@5 <> 8?8:9 ?7:5E8 @B 8L C569 5;8 F @ ><: 5;8 558::;<:@ :8@B8:8B 75 E@@8C8 :9 5< 8@A A8 @9 <> 5;8 <5;8: $ * 9 @8J AE7B8 7@ 7 O2 ' J ' ' C<F=7@ 57<@ $<> ; @A @B @ I' @B 65;<EA;'7@ CHE7:7@A ;7F' ' B7B @<5 <=5 7@ 8L C569 J ; 5 J ' J @58B ;7 '6 58 8FG6<98: ' B7B 8L C569 J ; 5 $ ' J @58B ><:$ <=5 7@8B 5;8 :8 G<@ 7=76759 J75;<E5 I@<J68BA8 <> G 97@A ;7 '= CI'> :8 J ;7C;' FE 5 ; ?8 =88@ ' :8678> 5 <@C8 5< 5;87:' F7@B ' @B 5< 5;87:' GE: 8 $ *

$);8@ J 6I7@A E!7 5<J :B ' :8760^ J8 7@HE7:8B ><:' @<5;8:' F @ G> 66 5;8 I@<J7@A <@8 @B 5;89 J75;'<@8 ?<7C8 G:<C6 7F8B 5; 5 .8 @ @5<7@8 ::86 <> 5;8 ?766 A8 <> (6 <EF @8;8 J '5;8 C<CI' <> ;7 '? 6689$) 8 <EA;5 <> C<E: 8 ><:' ::86 @B ><E@B ;7F' ' *J866 F B8 :8 <6E58 6<<I7@A >866<J 75;' C8:5 7@ B8>7 @5 7:' J;7C;' J ' :5;8:'5 I7@A$ 8 ;8 J<E6B A<$$ J8@59 >: @C ' B 9 J; 5D 8?8:' J '5;8 :8 LB5 J ' ;7 G:7C8$ ' 8@58B$ E5 ' FE 5 5 I8 ;7 ' C<@J B8$ ZY);9 <^3$; 75 J ' = <6E5869 7FG< 7=68 5< A85 6<@A J75;<E5 @<5;8:'5; @$ ' ;8 7B 5;7 ' @ 8?76 C<E@58D @ @C8 C F8 ><:5;'' <E5 ' <> 5;8 B :I@8 ' @B G:<C6 7F8B 75 86> 5;8 cC<F: B8$ ''B8FE7 8B 5;8 @8A<57 57<@ ' =:<I8 <>> @B J8 J8@5 EG 5A :876$;7 ' G6 C8 J766 =8 >:8HE8@569 7@8@57<@8B 7@ E= 8HE8@5 C; G58: @B J '7@ >E66 ?78J <> 5;8 8L5: <:B7@ :9 G8 I 5;8 8A@5 <> J;7C;' J8 J8:8 =<E5 5< 558FG5$ ¢ *

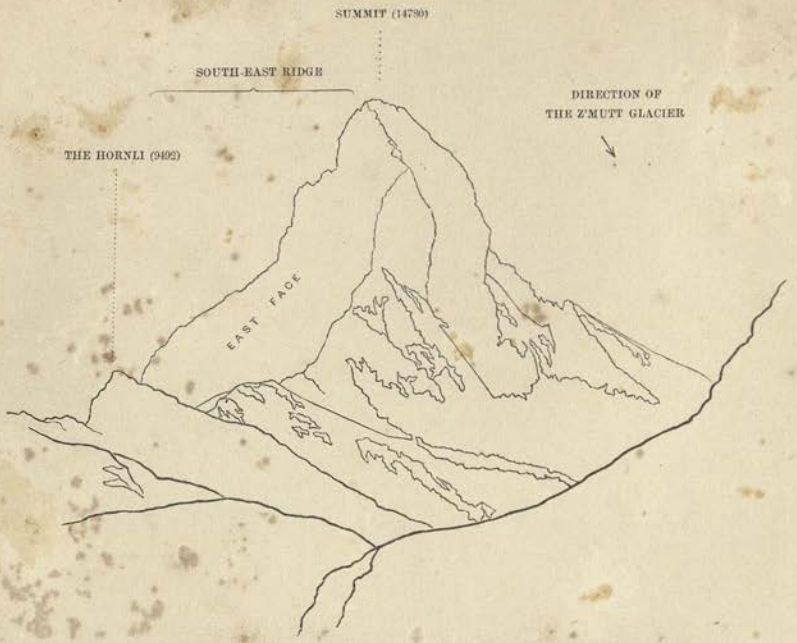
5 7 ' E@@8C8 :9 $5< 8@58:' 7@5< ' F7@E58 B8 C:7G57<@ <> 5;8 558::;<:@ >58:' 66 5; 5 ; ' =88@ J:7558@ =<E5 5; 5 > F<E ' F<E@5 7@$'' ;<8 =9 J=<7;' 5;7 ' =<<I' 7 ' 67I869 5< =8 :8 B J766 I@<J' 5; 5 5; 5 G8 I' 7 ' @8 :69 0 ' >885 ;7A;@B 5; 5 75 :7 8 ' =:EG569 =9 ' 8:78 ' <> C67>> ' J;7C;' F 9 G:<G8:69 =8 58:F8B G:8C7

(! " # ′ ! $%& '′ ′ #′ !

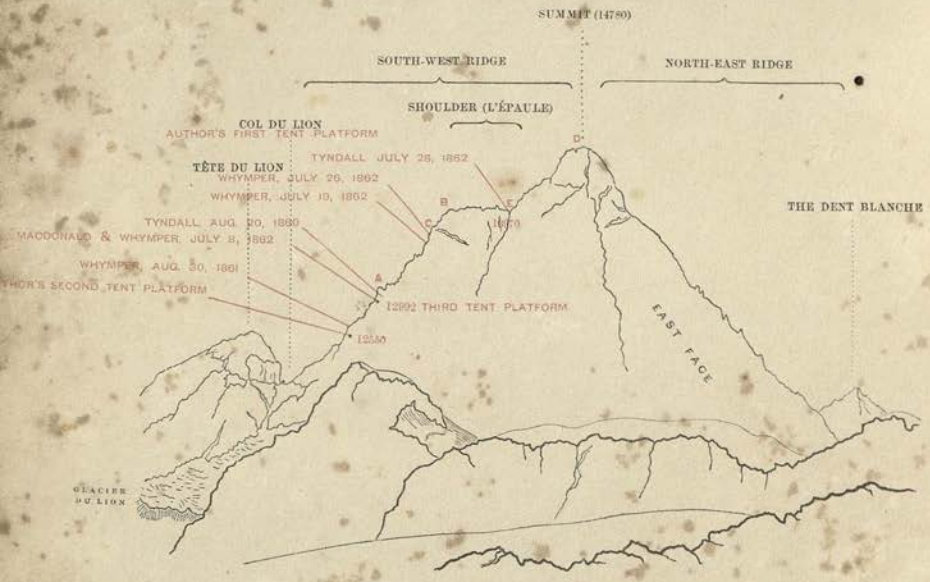
G7C8 0′ ′ C68 :′ ′ >885′ =<?8′ 5 ; 8′ A6 C78: ′ J ; 7C ;′ E: : <7 F B′ 75 ′ = 8$; 89′ J 766′ I @< J′ 5<<′ 5 ; 5′ 75′ J ′ 5 ; 8′ 6 5′ A: 8 5′ 6G7@8′ G8 I′ J ; 7C ;′ : 8 F 7@8B′ E@ 8 68B0 K +68 ′ <@′ CC<E@5′ <›′ 5 ; 8′ B7>>7CE659′ <›′ B<7@A′ <0′ 5 ; @′ >: <F′ 5 ; 8′ 58: : <:′ 7@ G7: 8B′ =9′ 75 ′ 7@?7@C7=68′ GG8 : @C8$; 8: 8′ 88 F 8B′ 5<′ =8′ ′ ′B: J@′ : <E@B′ 750′ EG′ 5<′ J ; 7C ;′ <@8′ F 7A ; 5′ A<0′ =E5′ @<′ > : 5 ; 8: $) 75 ; 7@′ 5 ; 5′ 7@?7 7=68′ 67@8′ A7@ ′ @B′ 8>>: 885 ′ J8: 8′ EGG< 8B′ 5<′ 8L7 5 K 5 ; 8′) @B8: 7@A′ . 8 J′ @B′ 5 ; 8′ G7: 75 ′ <›′ 5 ; 8′ B F@8B$; 8′ EG8: 5757<E ′ @ 57?8 ′ 7@′ 5 ; 8′ E: : <E@B7@A′ ? 6689 ′ M F @9′ <›′ J ; < F′ 5766′ c7: F 69′ =8678?8′ 75′ 5<′ =8′ @<5′ <@69′ 5 ; 8′ ; 7A ; 8 5′ F<E@5 7@′ 7@′ 5 ; 8′ 6G 0′ =E5′ 7@′ 5 ; 8′ J<: 6BN′ G< I 8′ <›′ ′ : E7@8B′ C759′ <@′ 75 ′ E F F 75′ J ; 8: 87@′ 5 ; 8′ G7: 75 ′ B J 8650′ @B′ 7›′ 9<E′ 6 EA ; 8B0′ 5 ; 89′ A: ?869′ ; <<I′ 5 ; 87: ′ ; 8 B ′ 0′ 5<6B′ 9<E′ 5<′ 6<<I′ 9<E: 86›′ 5<′ 88′ 5 ; 8′ C 568 ′ @B′ 5 ; 8′ J 66 0′ @B′ J : @8B′ <@8′ A 7@ 5′ ′ : ;′ GG: < C ; -68 5′ 5 ; 8′ F >E: 7 58′ B8 F <@ ′ >: <F′ 5 ; 87: ′ 7F G: 8A@ =68′ ; 87A ; 5 ′ F 7A ; 5′ ; E: 6′ B<J F′ ?8@A8 @C8′ ><: ′ <@8R ′ B8: 7 7<@$ EC ;′ J8: 8′ 5 ; 8′ 5: B757<@ ′ <›′ 5 ; 8′ @ 57?8 $ 5: <@A8: ′ F 7@B ′ >865′ 5 ; 8′ 7@>6E8@C8′ <›′ 5 ; 8′ J<@B8: >E6′ ><: F 0′ @B′ F 8@′ J ; <′ <: B7@ : 769′ G< I 8′ <: ′ J : <58′ 67 I 8′ : 57<@ 6′ =87@A 0′ J ; 8@′ 5 ; 89′ C F 8′ E@B8: ′ 75 ′ G<: ?8: 0′ 88 F 8B′ 5<′ HE75′ 5 ; 87: ′ 8@ 8 0′ @B′ : @58B0′ @B′ : ; G <B7 8B0′ 6< 7@A′ ><: ′ 5E@8′ /′ C< F F <@′ ><: F ′ <›′ G88C ;$?8@′ 5 ; 8′ <=8: ′ ' 8′ E / : 8′ J ′ F <?8B′ 5<′ 8@5 ; E 7 F′ J ; 8@′ ; 8′ + J′ 5 ; 8′ F <E@5 7@0′ @B K 7@ G7: 8B′ =9′ 5 ; 8′ G8C5 C68 K ; 8′ @57C7G 758B′ 5 ; 8′ G8CE6 57<@ ′ ›′ F <B8: @′ A8<6<A7 5 0′ 7@′ 5 ; 8′ 5: 7I 7@A′ 8@58@C8 ′ J ; 7C ;′ : 8′ G6 C8B′ 5′ 5 ; 8′ ; 8 B′ <›′ 5 ; 7 ′ C ; G58: $

; 8′ 558: ; <: @′ 6<<I ′ 8HE 669′ 7F G< 7@A′ >: <F′ J ; 58?8: ′ 7B8′ 75P′ 7 ′ 88@′ 0′ 75′ @8?8: R 88 F ′ C< F F <@G6 C8′ 0′ @B′ 7@′ 5 ; 7 ′ : 8 G8C50′ @B′ 7@′ : 8A : B′ 5<′ 5 ; 8′ 7F G: 8 7<@′ 75′ F I 8 ′ EG<@′ G8C5 5<: 0′ 75′ 5 @B ′ 6F < 5′ 6<@8′ F <@A 5′ F <E@5 7@ $ 5′ ; ′ @<′ : 7? 6 ′ 7@′ 5 ; 8′ 6!N 0′ @B′ =E5′ >8 J′ 7@′ 5 ; 8′ J <: 6B$

; 8′ 8?8@′ <: ′ 87A ; 5′ 5 ; <E @B′ >885′ J ; 7C ;′ C< F G< 8′ 5 ; 8′ C5E 6′ G8 I′ ; ?8′ 8?8: 6′ J866 F : I 8B′ : 7BA8 ′ @B′ @E F 8: <E ′ <5 ; 8: $P′ ; 8′ F < 5′ C<@57@E<E ′ 7 ′ 5 ; 5′ J ; 7C ;′ 68 B ′ 5<J : B ′ 5 ; 8′ @<: 5 ; 8 50′ 5 ; 8′ E F F 75′ 7 ′ 5′ 75 ′ ; 7A ; 8: 0′ @B′ 5 ; 8′ 675568′ G8 I 0′ C 668B′ 5 ; 8′ <: @670′ 7 ′ 5′ 75 ′ 6< J 8: ′ 8@B$ @<5 ; 8: ′ <@8′ 5 ; 5′ 7 ′ J 866′ G: <@<E@C8B′ B8 C8@B ′ >: <F′



THE MATTERHORN FROM THE NORTH-EAST.



THE MATTERHORN FROM THE SUMMIT OF THE THEODULE PASS.
(10,899 FEET)

;8 ?78J'<>'5;8 F<E@5 7@'>:<F' :876 7@'5;8'(6 <EF @8;8 7 '@<5 68 ' 5:7I7@A'5; @'5; 5' <@'5;8'<5;8:' 7B8' =E5 E E 669 75' F I8' 68 ' 7FG:8 7<@ =8C E 8' 5;8' G8C5 5<:' A:<J ' CCE 5<F8B' 5<'5;8' 7A;5' J;768' C<F7@A' EG' <:' B<J@'5;8' ? 6689$ 4:<F' 5677 ' B7:8C57<@'5;8' F<E@5 7@' 7 ' 88@'5<' =8' =:<I8@'EG'7@5<' ' 8:78 ' <>' G9: F7B 6 J8BA8 ; G8B'F 8 ' <@'5;8'<5;8:' 7B8'75'7 ' :8F :I =68' ><:'5;8'6 :A8 E@=:<I8@'8L58@5'<>'C67>> ' 5; 5'75'G:8 8@5 @ @B'><:'5;8' 7FG=C759'<>'75 ' <E567@8$ 5' J ' @ 5E: 6 5<' EGG< 8'5; 5' ' J 9' J<E6B' F<:8' :8 B769' =8'><E@B'5<' 5;8' EF F75'<@' ' 7B8'5;E ' =:<I8@' EG 5; @'7@' @9'<5;8:'B7:8C57<@$;8'8 58:@'> C8$>:<@57@A'V8:F 55 88F8B' <@8' F<<5; 7FG< 7=68' C67>> >:<Fc EF F75'5<= 8 5;8' A; 569'G:8C7G7C8 ' J;7C;'> C8'5;8'VR E55'A6 C78:' ><:= B8' @9' 558FG5' 7@'5; 5'B7:8C57<@$;8:8'$:8F 7@8B'<@69'5;8' 7B8'<>'(6 BE:@ @C;8' @B'75' J766'=8'><E@B'5; 5'@8 :59' 66'5;8' 8 :678 5' 558FG5 ' 5<' C8@B' 5;8' F<E@5 7@' J8:8' F B8'<@'5; 5' 7B8$

;8'>7: 5'8>><:5 '5<' C8@B'5;8' 558:;<:@'<>'J;7C;' ' ; ?8';8 :B J8:8' F B8'=9'5;8' AE7B8 <:' : 5;8:'=9'5;8' C; 8E: <>'(6 <E: ' $@ @C;8$P' ;8 8' 558FG5 ' J8:8' F B8'7@'5;8'98 : ' >:<F'5;8' B7:8C57<@'<>' :876 @B'5;8';7A;8 5'G<7@5'5; 5'J+ ' 55 7@8B' J ' =<E5' '> :' '5;8'G6 C8' J;7C;'7 '@<J'C 668B'5;8'Z ;7F@89'3 MC;8F7@+8N' ';87A;5'<>' =<E5 Q0 '>885$;< 8' J;<' J8:8' C<@C8:@8B+7@'5;8 8' 8LG8B757<@ ' J8:8'.8 @ @5<7@8' ::86 .8 @'. CHE8 ' ::86 (7C5<:' ::86 5;8' ==8'&><::85 @B'0& =:78668' HE7A@ S$ ' ; ?8' =88@' 7F =68'5<'<=5 7@' @9'>E:5;8:'B85 76 ' =<E5'5;8F[

;8' @8L5' 558FG5' J $ ' :8F :I =68'<@80 @B'<>'750'5<<0'5;8:8' 7 ' @<' GE=67 ;8B' CC<E@5$ 5' J ' F B8' =9'5;8' 8 : $ 6>:8B0 ; :68 0'$ @B' @B= C;' :I8:0'<>' 7?8:G<<60'7@'.E69' $;8 8' A8@568F8@0' 9 $ 2 ' '2 ' 8@B8 ?<E:8B'5<' 5<:F'5;8' C75 B86' =9' 55 CI7@A'75 '8 58:@'>HC8+K5; 5'5<' J;7C;':8>8:8@C8' J '!E 5'@<J' F B8' ' ' F<<5;0 7FG: C57C =68' C67>>$:$ @B= C;' :I8:

P' ;8:8' J8:8'@<'AE7B8 0 G:<G8:69' G8 I7@A0'7@'5;7 '? 6689' 5' 5; 5' 57F80' J75;'5;8' 8LC8G57<@'<>'<@8'<:'5J<' 8 7<@ ' @B' 867 78: $

_' ;7 '> C8'7 ' 5; 5' <@5;8' :7A;5' ; @B'<>'5;8' 6 :A8' 8@A: ?7@A' J;7C;' CC<FD G @78 ' 5;7 'C; G58:$ 5'7 ' 6 <:8G:8 8@58B0' F<:8' G:<F7@8@569 7@'5;8' 8@A: ?7@A'7@' ; G58:'L?$

COL DU LION THE "SHOULDER" EAST FACE DENT BLANCHE

THE MATTERHORN FROM NEAR THE SUMMIT OF THE THEODULE PASS.

6# /# ('' ! ' ' # ' ' '$' ! #% ' ' #' ! ' '#($(%'

7@><:F ' F8 5; 5 ;8 @B ;7 ' =:<5;8: ' J8@5 6<@A5;8 :7BA8 =85J88@ 5;8 <:@67 @B 5;8 G8 ;' E@576 5;89 C F8 5<5;8 G<7@5 J;8:8 5;8 C8@B7@A @A68 7 ' C<@ 7B8: =69 7@C:8 8B$;7 ' G6 C8 7 ' F :I8B <@ ' E><E:R ' F G <> J75S8:6 @B Q ' F85:8 ' M 0 Q ' >885N$;89 J8:8 5;8@ <=67A8B 5< =8 :' ' 675568 5<5;8 68>5 5< A85 <@5<5;8 > C8 <> 5;8 F<E@5 7@ @B >58:J :B 5;89 5E:@8B 5<5;8 >7A;50 @B C8@B8B =<E5 1 ' >885 >E:5;8: I88G7@A ' @8 :69 ' J ' G: C57C =68 5<5;8 C:8 5 <> 5;8 :7BA8 =E5 <CC 7<@ 6690 =8 :7@A ' 675568 5<5;8 68>5K5; 5 7 F<:8 <@5<5;8 > C8 <> 5;8 F<E@5 7@$;$8 =:<5;8: ' 5 :58B >:<F V8:F 55 @B B7B @<5 688G <E5$ 6<EB ' :7A;' J7@B0 @B J @5 <> 57F8 J8:8 5;8 C E 8 ' J ;7C;' G:8?8@58B 5;8 8 B :7@A A8@568F8@ >:<F A<7@A >E:5;8:$;E 5;87:' ;7A;8 5 G<7@5 J ' E@B8:' Q0 ' >885$

;8 5;7:B 558FG5 EG<@ 5;8 F<E@5 7@ J ' F B8 5<J :B ' 5;8 8@B <> EAE 5 =9 :$ (EA; @ JI7@ 0P >:<F 5;8 7B8 <> 5;8 (6 <E:@ @C;8$ ' ?7?7B CC<E@5 <> ;7 ' 8LG8B757<@ ; ' =88@ GE=67 ;8B =9 ;7F 7@ 1 ' 2 @B 75 ; ' =88@ :8>8::8B 5< 8?8: 6 57F8 ' =9 :<>8 <:' 9@B 66 7@ 5;8 @EF8:<E ' G G8:"' ;8 ; ' C<@5:7=E58B 5< 6G7@8"6758: 5E:8$ ' J766 B7 F7 ' 750 5;8:8><:80 ' =:78>69 ' G< 7=68$

$:$R JI7@ ' ; B 7@ G8C58B 5;8 F<E@5 7@ 7@ 0 J75;' 5;8 AE7B8 .$.$ 8@@8@0 @B ;8 ; B><:F8B 5;8 <G7@7<@ 5; 5 5;8 <E5;D J8 5 ":7BA8 ' J<E6B 68 B 5< 5;8 EF F75$ 8 8@A A8B .$. CHE8 ' ::860 J;< J ' C<@C8:@8B 7@ 5;8 >7: 5 558FG5 0 @B0 CC<FG @78B =9 8@@8@ M @B =9 :<>8 <:' 9@B 660 J;<F ;8 ; B 7@?758B 5<5 I8 G :5 7@ 5;8 8LG8B757<@N0 ;8 5 :58B ><:' 5;8 A G =85J88@ 5;8 675568 @B 5;8 A:8 5 G8 I$d

P :$ JI7@ ' J ' E@ J :8 5; 5 @9 558FG5 ; B =88@ F B8 !86=:8 ;7 ' <J@0 @B G<I8 <>75 ' 5;8 >7: 5$ _ E $ 0

>7 ;7 ' :7BA8 7 ' 88@ <@ 5;8 68>5 <> 5;8 6 :A8 8@A: ?7@A CC<FG @97@A 5;7 ' C; G58:' 0 @B 7>5;8 :8 B8:' C<@ E65 ' 5;7 ' ?78J0 5;8 8LG6 @ 5<:9 <E567@8 0 @B 5;8 F G 0 ;8 J766 =8 =68 5< ><: F ' > 7:' 7B8 ' <> 5;8 G<7@5 ' J ;7C;' J8:8 55 7@8B <@ 5;7 ' @B <@ 5;8 E= 8HE8@5 558FG5 $

d 7@C8 5;7 ' 57F8 5;8 F 66 G8 I' ; ' :8C87?8B 5;8 @ F8 58 BE 7<@$;8 A G 7 ' @<J C 668B 5;8 <6 BE 7<@ 0 5;8 A6 C78:' 5 75 ' = 80 5;8 &6 C78:' BE 7<@ 0 @B 5;8 AE669 J;7C;' C<@@8C5 ' 5;8F0 5;8 <E6<7:' BE $7<@$

Bennen was a guide who was beginning to be talked about. During the chief part of his brief career he was in the service of Wellig, the landlord of the inn on the Æggischhorn, and was hired out by him to tourists. Although his experience was limited, he had acquired a good reputation; and his book of certificates, which is lying before me,* shows that he was highly esteemed by his employers. A good-looking man, with courteous,

J. J. BENNEN (1862).

gentlemanly manners, skilful and bold, he might, by this time, have taken a front place amongst guides if he had only been endowed with more prudence. He perished miserably, in the spring of 1864, not far from his home, on a mountain called the Haut de Cry, in the Valais.†

Mr. Hawkins' party, led by Bennen, climbed the rocks abutting against the Couloir du Lion, on its south side, and attained the Col du Lion, although not without difficulty. They then followed the south-west ridge, passed the place at which the

* By the kindness of its owner, Mr. F. Tuckett. † See Appendix.

8 :678 5 8LG6<:8: ; B 5E:@8B = CI M5;8 ;7F@89N0P @B C8@B8B =<E5 >885 F<:8$:$ JI7@ @B .$.$ ::86 5;8@ 5<GG8B0 ;E5 8@@8@ @B :<>8 <: 9@B 66 F<E@58B >8J >885 ;7A;8:$;89 :85:8 58B0 ;<J8?8:0 7@ 68 5; @ ; 6> @ ;<E:0 >7@B7@A 5; 5 5;8:8 J 5<< 675568 57F80 @B0 B8 C8@B7@A 5< 5;8 <6 ;9 5;8 F8 :<E58 5;89 ; B ><66<J8B <@ 5;8 C8@50 G:<C88B8B 5;8@C8 5< :8760 B<J@ 5;8 <E6<7: 7@ 58 B <> ;9 5;8 :<CI $;8 G<7@5 5 J;7C; :$ JI7>7 5<GG8B 7 8 769 7B8@57>78B >:<F ;7 B8 C:7G57<@$ 5 ;87A;5 7 Q0 Q >885 =<?8 5;8 8 $ 5;7@I 5; 5 8@@8@ @B 9@B 66 C<E6B @<5 ; ?8 C8@B8B F<:8 5; @ <: >885 =89<@B 5;7 7@5;8>8J F7@E58 5;89 J8:8 = 8@5 ><:<F 5;8 <5;8: 0 5;89 J8:8 EG<@ <@8 <>5;8 F< 5 B7>>7CE65 G :5 <>5;8 F<E@5 7@$;7 G :595;8:8><:8 CC<FD G67 ;8B @ B? @C8 <> =<E5 <: 2 >885$

:$ JI7@ B7B @<50 > : I@<JU F I8 @<5;8: 558FG50 @B 5;8 @8L5 J F B8 =9 5;8 8 : $:I8:0 7@ .E69 $;89 A 7@ 5 :58B >:<F V8:F 550 ><66<J8B 5;8 :<E58 5;89 ; B 5:ECI <E5 <@ 5;8 G:8?7<E 98 :0 @B A<5 ;5568 ;7A;8: 5; @ =8><:8 0 =E5 5;89 J8:8 B8>8 58B =9 J @5 <> 57F80 ;<:569 >58:D J :B 68>5 V8:F 55 <@ CC<E@5 <> = B J8 5;8:0 @B B7B @<5 A 7@ :8@8J 5>587: 558FG5 $:$:I8: 9 K Z @ @875;8: C 8 B7B J8 A< ;7A; J8 C<E6B$ 5 5;8 G<7@5 J;8:8 J8 5E:@8B J8 J <E: J 9 ><: >8J ;E@B:8B >885 >E:5;8:0 =E50 =89<@B 5; 50 5;8 675>7CE6578 88F8B 5< 7@C:8 8$3 F F><:F8B 5; 5 =<5; 558FG5 ;<E6B =8 C<@ 7B8:8B 8LCE: 7<@ E@B8:5 I8@ J75; 5;8 ?78J <> C8:5 7@7@A J;85;8: 5;8:8 J @9 8@C<E: A8F8@5 5< F I8 F<:8 B867=8: 58 55 CI <@ 5;8 @<:5; 8 5 7B8$

9 AE7B8 @B : ::7?8B 5 :876 <@ 5;8 Q 5; <> EAE 5 0 @B J8 ><E@B 5; 5 :<>8 <: 9@B 66) =88@ 5;8:8 B 9 <: 5J < =8><:80 =E5 ; B B<@8 @<5677@A$; B 88@ 5;8 F<E@5 7@ >:<F @8 :69 8?8:9 B7:8C57<@0 @B 75 88F8B0 8?8@ 5< @<?7C8 ;I8 F9 86>0 > : 5<< FEC; ><: 7@A68 B 9$ 7@58@B8B 5< 688G <E5 EG<@ 750

P ?78J <>5677 G6 C8 CC<FG @78 ; G58: ?$

;7A;' ' G< 7=68 @B 5< 558FG5 5< :8 C;' 5678 EFF75 <@ 5;8 ><66<J7@A B 9$) 8 8@B8 ?<E:8B 5< 7@BEC8 @<5;8:' F @ 5< CC<FG @9 E ; E5 J75;<E5 ECC8 ' 55;7 ' SEF' EAJ 6B @B <5;8:' J866 I@<J@ AE7B8 ' J8:8 5;8:8 5 5;8 57F8 ;E5 5;89 B8C67@8B 5< A< <@ @9 CC<E@5$ ' 5E:B9 <6B >866<J K 858:' EAJ 6B8:' =9 @ F8K0 7B ;8 J<E6B A< ' 7 ' G:7C8^ Z J< ;7FB:8B >: @C $3 Z) ; 50 J;85;8:' J8 C8@B <:' @<5^3 Z 8 K' @<5;7@A' 68 $3 ;8 8@B' <> 5;8 F 558:' J 0 5; 5 66 5;8 F8@ J;< J8:8 F<:8 <:' 68 ' C G =68 ;<J8B ' 5:<@A B7 7@C67@ 57<@0 <:' G< 757?869 :8>E 8B0 5< A< M5;87:' B7 7@C67@ 57<@ =87@A ?8:9 FEC;' 7@ G:<G<:57<@ 5< 5;87:' C G C759N0 <:' 86 8 I8B ' YG:<;7=757?8 G:7C8$;7 00 75 F 9 =8 7B <@C8 ><:' 660 J ' 5;8 :8 <@ J;9 < F @9 >E5768 558FG5 ' J8:8 F B8 EG<@ 5;8 558:;<:@$ @8 >7: 5 : 58 AE7B8 >58:' @<5;8:' J ' =:<EA;5 EG 5< 5;8 F<E@5 7@0 @B G 558B <@ 5;8 = CI0 =E5 66 B8C67@8B 5;8 =E 7@8 $;8 F8@ J;< J8@5 ; B @< ;8 :5 7@5;8 F 558:0 @B 5<<I 5;8 >7: 5 <GG<:5E@759 5< 5E:@ = CI$P 4<:' 5;89 J8:80 J75;' 5;8 8LC8G57<@0<> <@8 F @0 5< J;<F :8>8:8@C8 J766 =8 F B8 G:8 8@5690 E@7?8: 669 7FG:8 8B J75;' 5;8 =8678>5; 5 5;8 EFF75 J ' 8@57:869 7@ CC8 7=68$

) 8 :8 <6?8B5< A< 6<@80 =E50 @57C7G 57@A' 'C<6B =7?<E C0 =8AA8B 5;8 6< @<> ' C<EG68 <> =6 @I85 ' >:<F 5;8 7@@I88G8:$ ' :8>E 8B 5 ; + 0 A7?7@A 5;8 CE:7<E ' :8 <@0 5; 5 J8 ; B =<EA;5 ' =<5568 <> =: @B9 5 6 GE:@ @C=80 @B ; B @<5 =<EA;5 @9 >:<F ;7F ' < =: @B90 @< =6 @I85 0 GG8 :8B 5< =8 ;7 ' :E68$) 8 B7B @<5 :8HE7:8 5;8F' 5; 5 @7A;50 ' 75 J ' G 8B 7@ 5;8 ;7A;8 5 C<J ;8B 7@ 5;8 ? 6689 0 J;7C;' 7 ' =<E5 @ ;<E:' @8 :8:' 5< 5;8 F<E@5 7@ 5; @ 7 ' 5;8 ;<586$;8 C<J;8:B 0 J<:5;9 >866<J 0 86B<F 5:<E=68B =9 5<E:7 5 0 ; 768B <E:' C<FG @9 J75;' B867A;50 @B B7B 5;87:' =8 5 5< F I8 E ' C<F><:5 =68 0 =:<EA;5 <E5 5;87:' 675568 5<:8 ' <> 7FG68 ><<B0 @B0 ' J8 5 J75;' 5;8F' :<E@B 5;8 A:8 5 C<GG8:' G<5 J;7C;' ;E@A' <?8:' 5;8 >7:80 = B8 E ' 7@ ;E I9 ?<7C80 =E5 J75;' ;<@8 5 7@58@50 5< =8J :8 <> 5;8 G8:76 ' > 5;8 ; E@58B C67>> $) ;8@ @7A;5 J ' C<F7@A <@0 J8 J0 58 67@A EG 5;8 ; /6 7B80 5;8 ><:F ' <> .8 @ @5<7@8 ::86 @B

the comrade. "Oh ho!" I said, "you have repented?" "Not at all; you deceive yourself." "Why then have you come here?" "Because we ourselves are going on the mountain to-morrow." "Oh, then it is *not* necessary to have more than three." "Not for *us*." I admired their pluck, and had a strong inclination to engage the pair; but, finally, decided against it. The comrade turned out to be the J. J. Carrel who had been with Mr. Hawkins, and was nearly related to the other man.

JEAN-ANTOINE CARREL (1869).

Both were bold mountaineers; but Jean-Antoine was incomparably the better man of the two, and he is the finest rock-climber I have ever seen. He was the only man who persistently refused to accept defeat, and who continued to believe, in spite of all discouragements, that the great mountain was not inaccessible, and that it could be ascended from the side of his native valley.

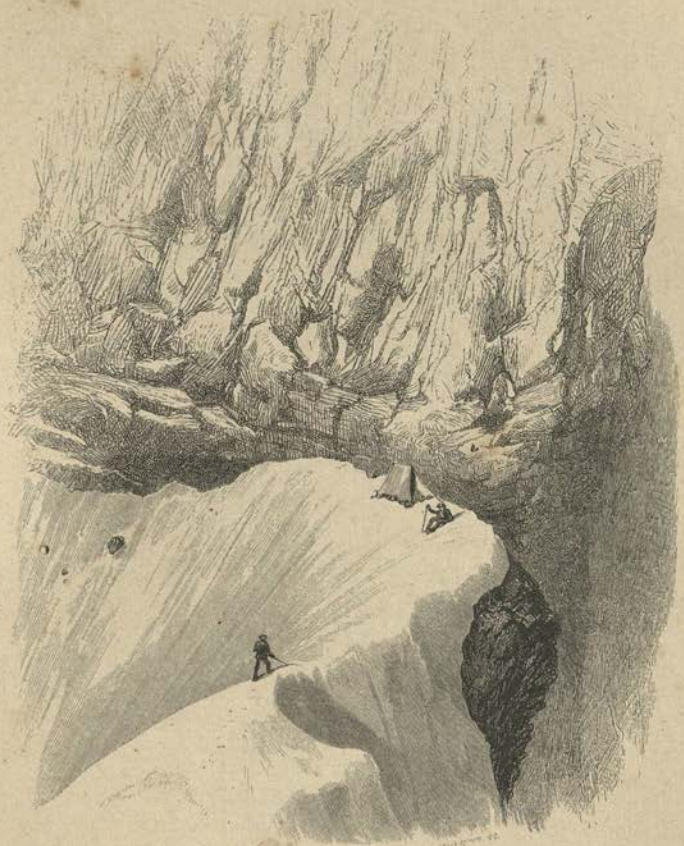
The night wore away without any excitement, except from the fleas, a party of whom executed a spirited fandango on my cheek, to the sound of music produced on the drum of my ear, by one of their fellows beating with a wisp of hay. The two Carrels crept

@<7 868 69' <E5' =8><:8' B 9=:8 I0 @B' +98@5' <>$) 8' B7B' @<5' 68 ?8' @@576' @8 :69' 8?8@' <RC6<CI0 @B' ><66<J8B' 5678F' 687 E:8690' 68 ?E7A' 66' <E:' G:<G8:578 ' 7@' 5;8' C<J ;8B' 0 E@58:8B' <?8:' 5;8' A8@57 @ 5EBB8B' 6<G8 ' J;7C;' 7@58:?8@8' =85J88@' 5;8' ;8B' @B' 5;8' &6 C78:' BE' 7<@0' 68>5' C<J ' @B' 5;87:' G 5E:8 ' =8;7@B05: ?8: 8B' 5;8' 5<@9' J 58 0 @B' ::7?8B' 5' 5;8' 7C8$ 6B0;:B' =8B ' <>' @<J'6 9' <@' 75 ' :7A;5' = @I' M<E:' 68>5' ; @BN0 @B' J8' F<E@58B' <?8:' 5;8F' <@' 5<' +;8'6<J8:' G<:57<@' <>' 5;8' A6 C78:' J75;' 8 8$ E50 ' J8' C8@B8B0 C:8? 8 ' =8C F8' @EF8:<E 0 @B' J8' J8:8' 5'6 5' =:<EA;5' 5<' ; 65' =9' <F8' J;7C;' J8:8' <>' ?8:9'6 :A8' B7F8@ 7<@ ' 0 @B0 ' <E:' CE557@A' G<J8:' ' J8:8' 67F758B0 J8' <EA;5' @' 8 78:' :<E580 @B' 5E:@8B0 @ 5E: 6690' 5<' 5;8' 6<J8:' :<CI ' <>'5;8' 858' BE' 7<@0' J;7C;' <?8:6<<I' 5;8' A6 C78:' <@' 75 ' J8 5$ <F8' A<<B' C: F=67@A' 5<<I' E ' 7@' ' ;<:5' 57F8 <@' 5<' 5;8' C:8 5' <>' 5;8' :7BA8' J;7C;' B8 C8@B ' 5<J :B ' 5;8' <E5;' 0 @B' 5;8@C80' EG' 5<' 5;8' 68?86' <>' 5;8' <6' BE' 7<@0' 5;8:8' J ' ' 6<@A' @ 5E: 6' 5 7:D C 80' <@' J;7C;' 75' J ' 86B<F' @8C8 :9' 5<$ E 8' 5;8' ; @B $) 8' BE==8B' 5;8' G6 C8' Z ;8' &:8 5' 5 7:C 8$3 ;8@' 5;8' C67>> ' <>' 5;8' 858' BE' 7<@0' J;7C;' :7 8' =<?8' 5;8' <E6<7:0' B' 5<' =8' I7:58B$;7 ' G :5' ? :78 ' C<@ 7B8: =69' 7@' B7>>8:8@5' 8 <@ 0 @B' 7@' ' J8' ><E@B' 75' B7>>7CE650 ><:' 5;8' >7@8' 58 B9' J8 5;8:' <>' 5; 5' 98 :' ; B' :8BEC8B' 5;8' @<J =8B ' =E557@A' A 7@ 5' 75' 5<' ' 6<J8:' 68?86' 5; @' E E 60P @B' 5;8' :<CI ' J;7C;' J8:8' 68>5' 8LG< 8B' 5' 5;8' !E@C57<@' <>' 5;8' @<J' J75;' 5;8' C67>> 0 ; B' >8J' 68BA8 ' <:' C: CI ' 5<' J;7C;' J8' C<E6B' ;<6B$ E5' ="+' ; 6> G 5' 58@' <RC6<CI' J8' 5<<B' <@' 5;8' <60 @B' 6<<I8B' B<J@' EG<@' 5;8' F A@7>7C8@5' = 7@' <E5' <>' J;7C;' 5;8' VR E55' A6 C78:' >6<J $) 8' B8C7B8B' 5 ' G ' 5;8' @7A;5' EG<@' 5;8' <60 ><:' J8' J8:8' C; :F8B' J75;' 5;8' C G =767578 ' <>' 5;8' G6 C80' 65;<EA;' 75' J ' <@8' J;8:8' 67=8:578 ' C<E6B' @<5' =8' 5 I8@$ @' <@8' 7B80 ' ;88:') 66' <?8:;E@A' 5;8' 78>8@F 558@' A6 C78:0 <@' Y5;8 <5;8>0 @588G0' A6 9' 6<G8 ' <>' ; :B' @<J' B8 C8@B8B' 5<' 5;8' &6 C78:' BE' 7<@0' >E::<J8B' =9' J 58:' @B' =9' > 667@A' 5<@8 0 <@' 5;8' @<:5;' 5;8:8' J ' 5;8' A:8 5' G8 I' <>' 5;8' 5D 58:;<:@0P' @B' <@' 5;8' <E5;' 5;8' C67>> ' <>' 5;8' 858' BE' 7<@0' ;:<J

P' ;8' 8@A: ?7@A' 7 ' F B8' >58:' ' I85C;' 5 I8@' >:<F' 5;8' :<CI ' <>' 5;8' 558:;<:@0' !E 5' =<?8' 5;8' <6$

a bottle down to the Tiefenmatten—no sound returns for more than a dozen seconds.

* * * "how fearful
And dizzy 'tis, to cast one's eyes so low!"



THE COL DU LION: LOOKING TOWARDS THE TÊTE DU LION.

But no harm could come from that side. Neither could it from the other. Nor was it likely that it would from the Tête du Lion, for some jutting ledges conveniently overhung our proposed resting-place. We waited for a while, basked in the sunshine, and watched

<:' 67 58@8B' 5<' 5;8' ::86 (' J;<' J8:8' <F857F8 ' 88@' <:';8 :B(';7A;'
=<?8' E (' EG<@' 5;8' :7BA8' 68 B7@A'5<J :B ' 5;8' EF F75(@B(' 68 ?7@A'
5' F7B B 9(' J8' B8 C8@B8B' 5<' 5;8' C<J ;8B(' G CI8B' EG' 5;8' 58@5' @B'
<5;8:' G:<G8:578 (' @B' :85E:@8B' 5<' 5;8' <6(' 65;<EA;' ;8 ?769' 6 B8@(' =8><:8' 7L' <RC6<CI$;7 ' 58@5' J ' C<@ 5:EC58B' <@' 'G 558:@' EAA8 58B' =9' :$ 4: @C7 ' & 65<@(' @B' 75' J ' @<5' ' ECC8 $ 5' 6<<I8B' ?8:9' G:8559' J;8@' 85' EG' 7@' <@B<@(' =E5' 75' G:<?8B' 5;<:<EA;69' E 868 ' 7@' 5;8' 6G $ 5' J ' F B8' <>' 67A;5'C @? (' @B' <G8@8B' 67I8' ' =<<I'(' ; B' <@8' 8@B' C6< 8B' G8:F @8@569' @B' 5;8' <5678:' J75;'>6 G '(' 75' J ' EGG<:58B' =9'5J<' 6G8@ 5<CI (' @B' ; B' 5;8' C @? ' 7B8 ' G:<6<@A8B' <' '5<' 5E:@' 7@' E@B8:@8 5;(' @EF8:<E ' C<:B ' J8:8' 8J@' 5<' 5;8' 6<J8:' 8BA8 (' 5<' J;7C;' 5<@8 ' J8:8' 5<' =8' 55 C;8B(=E5';5;8' F 7@' > 58@7@A ' J8:8' =9' ' C<:B' J;7C;' G 8B' E@B8:@8 5;' 5;8' :7BA8' @B' 5;:<EA;' 7:<@' :7@A ' C:8J8B' 7@5<' 5;8'5<G ' <>' 5;8' 6G8@ 5<CI (' @B' J8:8' 8CE:8B' =9' G8A $;8' J7@B(' J;7C;' G6 9>E669' C ::88:8B' =<E5' 5;8' E::<E@B7@A"C67>> (' J ' B:7?8@' 5;:<EA;' <E:' A G' J75;' 5;8'><:C8' <>' ' =6<J G7G8(5;8'>6 G ' <>' 5;8' 58@5' J<E6B' @<5' I88G' B<J@(' 5;8' G8A ' J<E6B' @<5' 5 9' 7@(' @B' 75' 8L;7=758B' <' F :I8B' ' B8 7:8' 5<' A<' 5<' 5;8'5<G' <>' 5;8' ' 8@5' 6 @C;8(' 5;' 5' J8' 5;<EA;5' 75' G:EB8@5' 5<' 5 I8' 75' B<J@' @B' 5<' 75' EG<@' 75$);8@' @7A;5'C F8' <@' J8' J: GG8B' <E:D 86?8 ' 7@' 75(@BB@ B8' <E:' C FG' 'C<F><:5 =68' ' 5;8' C7:CE7; 5 @C8 ' J<E6B' 66<J$;8' 768@C8' J '7FG:8 7?8$ <' 67?7@A' 5;7@A' J ' @8 :' <E:' <675 :9' =7?<E C'(' 5;8' ::86 ' ; B' 5E:@8B' = CI' @B' J8:8' <E5' <>' ;8 :7@A(' 5;8' 5<@8 ' ; B' C8 8B' 5<' > 66(@B' 5;8' 5:7CI67@A' J 58:' 5<' FE:FE:K

Z' ;8' FE 7C' <>' J;< 8' 67HE7B' 67G'
>5B' ;88@' 5<' E ' 8<G7G @7<@ ;7G0
@B(' 7@' <E7 ' 6<@869' 67>8(' ; B' A:<J@'
<' ; ?8' @' 6F< 5';EF @' 5<@8$3P

5' J ' =7558:69' C<6B$) 58:' >:<S8' ; :B' 7@' ' =<5568' E@B8:' ';8 B$ <5' E:G:7 7@A(' J8' J8:8' C5E 669' <@' @<J(' @B' 7@' ' G< 757<@' J;8:8' 5;8' 67A;58 5' J7@B' J ' 5' <@C8' >865$ 4<:' '57F8' J8' B<S8B(' =E5' =<E5' F7B@7A;5';8:8' C F8' >:<F' ;7A;' 6<>5' ' 5:8F8@B<E

.$ &$);75578:$

8LG6< 7<@ >< 66< J 8B =9 8C<@B <> B8 B HE785 A:8 5 F <> :<CI 67 76 G675 <> @B J B8 C8@B7@A 5<J :B E 9 AE7B8 5 :58B EG J:E@A 677 ; @B @B 8LC6 7F8B Z F9 &<B J8 :8 6< 5 3) 8 ;8 :B 75 C<F7@A F >58: F G<E:7@A <?8: 5;8 G:8C7G7C8 =<E@B7@A @B :8=<E@B7@A >:<F C67>> 5< C67>> @B 5;8 A:8 5 :<CI 7@ B? @C8 F757@A <@8 @<5;8:$;89 88F8B 5< =8 C6< 8 65;<EA;5;89 J8:8 G:<= =69 B7 5 @5 =E5 <F8 F 66 >: AD F8@5 J;7C;B:<GG8B EG<@E 5 5;8 F8 57F8 >:<F 5;8 68BA8 !E 5 =<?8 BB8B 5< 5;8 6 :F @B F9 B8F<: 67 8B C<FG @7<@ G 8B 5;8 :8F 7@B8: <> 5;8 @7A;5 7@ 5 58 <> ;EBB8: 8! CE6 57@A Z 58::7=6803 @B <5;8: B!8C57?8 $

) 8$ GE5 <E: 86?8 7@ F<57<@ 5 B 9=:8 I @B C<F F8@C8B 5;8 C8@5 <> 5;8 <E5; J8 5 :7BA8$;8:8 J @< F<:8 E@58:7@A J75;; @B 7@ 5;8 G<CI85 8 C;58G; B 5< =8 8 :@8B =9 B<J@:7A;5 C67F=7@A$ E5 75 J 5;8 F< 5 G68 @5 I7@B <> C67F=7@A$ R ;8 :<CI J8:8 > 5 @B E@8@CEF=8:8B J75;B8=:7 5;8 C: CI J8:8 A<<B 65;<EA;@<5 @EF8:<E @B 5;8:8 J @<5;7@A 5< >8 :8LC8G5 >:<F <@8R 86>$ < J8 5;<EA;50 5 68 50 @B ;<E58B 5< J I8 8C;<8 >:<F 5;8 C67>> $;5;8:8 7 @< :8 G<@ 8$ %<5 9850 J 75 J;768 8?8:95;7@A;8:8 7 EG<@ EG8:6 57?8 C 680 C<E@5 B<S8@ @B 5;8@5;8 8C;<8 J 766 :85E:@>:<F 5;8 J 66 <> 5;8 8@5 BR 8:8@ F768 J 90 7@ J ?8 <> GE:8 @B E@B8>768B <E@B0 <>50 FE 7C 60 @B J885$ 65 F<F8@5 5< :8A :B 5;8 ?78J) 8 <?8:6<<I 5;8 +58 BE 7<@ @B@<5;7@A 8LC8G5 5;8 8@5 BR 8:8@ J;< 8 EF F75 7 5766 ;<E @B >885 =<?8E 5 @B 7@ 5;8 J 9 5;8 : @A8 <> 5;8 &: 7 @ 6G K @ <C8 @ <> F<E@5 7@ K :8 88@ 5 A6 @C80 A<?8:@8B =9 5;87: 5;:88 A:8 5 G8 I 5;8 &:7?<6 &: @B : B7 @B <E: B8 5$ 78::8$ <J <>50 @B 985 ;<J ; :G0 5;89 6<<I 7@ 5;8 8 :69 F<:@7@A ;8 F7B B 9 F7 5 ; ?8 @<5 =8AE@ 5< :7 8 @<5;7@A 7 <= CE:8B 8?8@ 5;8 G<7@58B (7 <0 66 =E5 ;E@B:8B F768 J 90 7 G8:>8C569 B8>7@8B$

E:@ 5< 5;8 8 50 @B J 5C;5;8 E@R 6 @57@A : 9 C<F7@A C:< 5;8 <@58 F @<J >786B $ <<I 5 5;8 ; B<J8B G :5 0 @B 88 ;<J 8?8@ 5;89 : B7 @5 J75;:8>68C58B 67A;5K :8 F<:8

=:7667 @5' 5; @' F @' I@<J ' =<J' 5<' B8G7C5$ 88 =<J K 8?8@' 5;8:8 K' 5=8' A8@568' E@BE6 57<@ ' A7?8' ; B<J ' J75;7@' ; B<J ' @B' ;<J K' 985' A 7@ K J;8:8' > 667@A' 5<@8 ' <:' 7C8' ; ?8' 68>5' ' 5: CI 5;8:8' :8 ; B<J ' EG<@' ; B<J 8 C;' J75;' ' 67A;5' @B' ' B :I' 7B8 J75;' 7@>7@758' A: B 57<@ ' <>' F 5C;68 ' 58@B8:@8 $;8@ @<58' 5;8' E@D 67A;5' '75' 58 6 '@<7 868 69' 6<@A @B' :8?8 6 'C<E@568 ' E@ E G8C58B' ><:F 0K 5;8' B867C 58 :7GG68 67@8 ' J;7C;' F :I' 5;8' C<@C8 68B' C:8? 8 @B' 5;8' J ?8 ' <>' B:7>58B' @<J' G:<BEC7@A' 8 C;' F7@E58' F<:8' >7A;5 ' @B' >:8 ;' ; B<J ' G :I67@A' <@' 5;8' 8BA8 ' @B' A67558:7@A' <@' 5;8' 8@B ' <>' 5;8' 7C7C68 ;7@7@A' <@' 5;8' ;87A;5 ' @B' 766E F7@ 57@A' 5;8' B8G5; E@576' 66' 7 ' A6<J @B' 5678' B SS68B' 898' :85E:@ ' ><:' :8678>' 5<' 5;8' <F=:8' C: A $

:B69' @' ;<E:' ; B' G 8B' 7@C8' J8' 68>5' 5;8' <6 =8><:8' J8' ::7?8B' 5' 5;8' Z ;7F@89$3 5' G:<?8B' 5<' =8' 5;8' C<E@58:G :5' <>' 5;8' G6 C8' 5<' J;7C;' :8>8:8@C8' ; ' =88@' F B8' 5' G$ ' ' F<<5;' 5: 7A;5 6 =' <>' :<CI' J ' >7L8B' 5' ' C<@ 7B8: =68' @A68' =85J88@' 5J<' <5;8:' 8H+E 669' F<<5;$P' 9' C<@7G @7<@' 8 A 98B' 5<' A<' EG' @B' >58:' C:EFG67@A' ;7 ' 6<@A' =<B9' 7@><' F @9' :7B7CE6<E ' G< 757<@ ' ;8' ' 7B' 5; 5' ;8' J<E6B' @<5' ><:' ;8' C<E6B' @<5' B<' 75$) 75;' <F8' 675568' 5:<E=68' A<5' EG' 75' E@ 7 58B' @B' 5;8@' F9' AE7B8' 578B' ;7F 86>' <@' 5<' 5;8' 8@B' <>' <E:' :<G8' @B' ' 8@B8 ?<E:8B' 5<' GE66' ;7F' EG$ E5' 678' J ' <' J I J :B' 5; 5' ;8' B7B' 675568' ><:' ;7F 86>' @B' <' ;8 ?9' 5; 5' ;8' G:<?8B' 5<<' FEC;' ><:' F8' @B' >58:' 8?8: 6 558FG5 ' ;8' E@578B' ;7FD 86>' @B' HE78569' <= 8:?8B' 5; 5' ;8' ;<E6B' A<' B<J@$ ' 5<6B' ;7F' ;8' J ' ' C<J :B' @B' $ ' F8@57<@8B' ;7 ' <G7@7<@' <>' F8$)' :8HE8 58B' ;7F' 5<' A<' 5<' >876' @B' 5<' 9' 5; 5' ;8' ; B' 68>5' ;7 ' Z F<@ 78E:3' <@' 5;8' F<E@5 F' @B' ;8' 5E:@8B' 5<' A<' J;8:8EG<@' ' ; B' 5<' 8 5' ;EF=68' G78' @B' I' ;7F' 5<' C<F8' = CI ><:' 65;<EA;' 75' J '@<5' ?8:9' B7>>7CE65' 5<' A<' EG' @B' @<5' 5' 66' B @A8:<E ' J75;' ' F @' 5 @B7@A' =86<J' 75' J ' HE758' @<5;8:' 5;7@A' 5<' C<F8' B<J@' ' 5;8' 6<J8:' 8BA8' <?8:;E@A' 7@' ' G:<?<I7@A' F @@8:$

;8' B 9' J ' G8:>8C5' 5;8' E@' ?E ' G<E:7@A' B<J@' A: 58>E6

R* :$ J I7@ ' :8>8::8B' 5<' 5;7$ ' G6 C8" ' <@8' <>' 8LC8 7?8' B7>>7CE659$ 8' ;<J8?8:' ><E@B' 75' C< 58B' J75;' 7C8' J8' ><E@B' 75' >:88' >:<F' 7C8$

J :F5;0 5;8 J7@B ; B > 668@0 5;8 J 9 88F8B C68 :0 @< 7@ EG8:D =68 <= 5 C68 J '7@ 7A;5C =E5 J; 5 C<E6B <@8 B< 6<@8^ ' 5<<B <@5;85<l70C; >7@A E@B8:'5;7 'E@8LG8C58B C<@5:858FG 0 @B:8F 7@8B ><:' <F8 57F8 7::8 <6E58 0 =E5 '75 =8C F8 GG :8@55; 55;8 ;7FD @89 J ' J8G5 F<:8 >:8:G78@569 5; @ J ' @8C8 :9 M75 J ' ' @ 5E: 6C; @@86 ><:' > 667@A 5<@8 N0 '5E:@8B 56 50 B8 C8@B8B J75;' 5;8 7 5 @C8 <> F9 C<FG @7<@0 @B :85E:@8B J75;' ;7F' 5< :8760 J;8:8 J8 ::7?8B =<E5 F7B B 9$

;8 ::86 ' B7B @<5 ;<J' 5;8F 86?8 0 =E5 J8 J8:8 5<6B 5; 5 5;89 ; B @<5 A<5 5< @9 A:8 5 ;87A;50P @B 5; 5 5;8 ZC<F: B803 J;< ><:' C<@?8@78@C8 ; B 5 I8@ <>;7 ' ;<8 ' @B 578B 5;8F' :<E@B ;7 ' J 7 50 ; B F @ A8B 5< 685 <@8 <>;5;8F' 67G0 @B ; B C<F8 B<J@ J75;' ' G78C8 <> C<:B > 58@8B :<E@B ;7 ' @ I8B ><<5$ %<5J75; ' 5 @B7@A 5;7 0 5;89 ; B =<6B69 A67 B8B B<J@ 5;8 <E6<7:' B#7 7<@0 .$.$ ::86 ; ?7@A ;7 ' ;<868 ' ><<5 578B EG 7@ ' G<CI85 ; @BI8:D C;78>$

;8 558:;<:@ J '@<58 768B A 7@ 7@ $ ' 68>5 :876 J75;' 5;8 C<@?7C57<@ 5; 5 75 J ' 675568 E 8 ><:' ' 7@A6=' 5<E:7 5 5< <:A @7 8 @ 55 CI' EG<@ 750 < A:8 5 J ' 75 '7@>6E8@C8 <@ 5;8 F<: 6 ' <> 5;8 AE7B8 0 @B G8: E B8B 5; 5 75 J ' B8 7: =68 5 68 5 5J< ;<E6B A<0 5< = CI' 8 C;' <5;8:' J;8@ :8HE7:8B [@B B8G :58B J75;' F9 AE7B8 >' <?8:' 5;8 <6 ;8<BE680 6<@A7@A0 F<:8 5; @ =8><:80 5< 7H I8 5;8 C8@50 @B B858:F7@8B 5< :85E:@0 7>' G< 7=68 J75;' ' C<@@ G @7<@0 5< 6 9 78A8 5< 5;8 F<E@5 7@ E@576 <@8 <:' 5;8 <5;8:' J ' ? @HE7 ;8B$

@ ' 68 :@8B >58:J :B ' >:<F .8 @ @5<7@8 ::86 5; 5 5;89 A<5 C<@ 7B8: =69 ;7A;8:'5; @ EG<@ 5;87:' G:8?7<E ' 558FG5 0 @B =<E5 Q ' <:' ' >885 ;7A;8:' 5; @ :<>8 <:' 9@B 66 7@ $ @ Q .' J' 5;8 7@757 6 ' <> .$ $ ::86 <E5 <@ 5;8 :<CI ' 5 5;8 G6 C8 J;8:8 ;8 @B ;7 ' C<F: B8 ; B 5E:@8B = CI$

5 ;7 ' F @ G:<?8B 5< =8 ;<567 J7667@A @B E 8>E6 <@ 6<J8:' A:<E@B0 @B ?<6E@5 :769 CC<FG @78B F8 ' C<@ 7B8: =68 B7 5 @C8 <E5 <> ;7 ' J" 90 J75;<E5 >88 <:' :8J :B$

¢¢" 7 ' '68$ <@' 9<E' ;<E6B' ;88B0
:90' 5:90' 5:9' A 7@$
>' 5' >7: 5' 9<E' B<@R5' ECC88B$
:90' 5:90' 5: -' A 7@$
] ;8@' 9<E:' C<E: A8' ;<E6B' GG8 :$
4<:' 7>' 9<E' J 766' G8: 8?8:8'
<E' J 766' C<@HE8:0' @8?8:' >8 :$
:90' 5:90' 5:9' A 7@$3

! * 9

' 98 :' Q' J ' 5766' 9<E@A0' @B' 5;8' 558:;<:@0' C6 B' ;7' 75 ' J7@5:9' A :;0' =<:8' ;E5' 675568' :8 8F=6 @C8' 5<' 5;8' 558:;<:@' <>' 5;8' EF F8:0' J;8@' ' @8J' ><:C8' C F8' 5<' B<' = 5568' J75;' 5;8' F<E@5 7@0' >:<F' @<5;8:' B7:8C57<@$:$ $ $ U8@@8B9' <>' 88B ' C<@C87?8B' 5;8' 8L5: <:B7@ :9' 7B8 ' 5; 5' 5;8' G8 I' F7A;5' G:<?8' 68 ' 7F!7: C57C =68' 7@' . @E :9' 5; @' 7@' .E@80' @B' ::7?8B' 5' V8:F 55' 7@' 5;8' ><:F8:' F<@5;' 5<' GE5' ;7 ' C<@C8!757<@' 5<' 5;8' 58 5$) 75;' 5<E5' 858:' 8:F' @B' 5E:B9' 858:' EAJ 6B8:' ;8' 68G5' 7@' 5;8' 5568' C; G8 6' 5' 5;8' C;J :S8@ 880' @B' <@' 5;8' @8L5' F<:@7@A0' 67I8' 5;8' ' :I8:0' ><66<J8B' 5;8' :7BA8' =85J88@' 5;8' G8 I' C 668B' <:@67' @B' 5;8' AL8 5' F<E@5 7@$ E5' 5;89' ><E@B' 5; 5' @<J' 7@' J7@58:' <=898B' 5;8' <:B7D @ :9' 6 J 0' @B' 5; 5' 5;8' J7@B' @B' >:< 5' J8:8' @<5' 68 ' E@I7@B' 5; @' 7@' EF F8:$ Z ;8' J7@B' J;7:68B' EG' 5;8' @<J' @B' G7CE688' <>' 7C8' 7@5<' <E:' > C8 ' 67I8' @88B68 0' @B' >6 5' G78C8 ' <>' 7C8' ' ><<5' 7@' B7 F858:0' C ::78B' EG' >:<F' 5;8' A6 C78:' =86<J0' J8@5' >697@A' G 5$ 5766' @<' <@8' 88F8B' 5<' 67I8' 5<' =8' 5;8' >7: 5' 5<' A7?8' 7@0' 5766' ' AE 5' >78:C8:' 5; @' E E 6' ><:C8B' E ' 5<' ;8658:' ><:' ' 57F8' =8;7@B' ' :<CI$ F F8B7 5869' 75' J ' 5 C7569' E@B8: 5<<B' 5; 5' <E:' 8LG8B757<@' FE 5' @<J' 8@B' 0' =E5' J8

B858:F7@8B 5< 68 ?8 <F8 F8F8@85< <:<E:'?7 75 @B >58:'B8 C8@BD 7@A ' C<@ 7B8: =68 B7 5 @C8 J8><E@B ' E75 =68 G6 C8 J75='6<< 8 5<@8 '<> J ;7C;' 5< =E76B ' C 7:@$ @ ; 6> @ ;<E:' '5<J8:' 7L'>885 ;7A;' J ' 8:8C58B 0 '=<5568 J75;' 5;8 B 58 J ' G6 C8B 7@ 7B80 @B J8 :85:8 58B ': G7B69 'G< 7=68$3P ;7 'C 7:@ J 'G6 C8B 5'5;8 G<5 F :I8B EG<@ 'E><E:R' G <> J75S8:6 @B 0 Q '>885 M Q ' F85:8 N @B 5;8 ;7A;8 5 G<7@5 55 7@8B=9 :$ U8@@8B9 J '@<50 ' $7F A7@80 F<:8 5; @ 5J<<:'5;:88 ;E@B:8B>885 =<?8 75$

;<:569 >58:'5;7 ' :<>8 <:' 9@B 66 A ?80 7@ ;7 ' 675568 5: C5

2 '' ' @ CC<E@5 <> 5;8 :8 <@ J;9 ;8 ; B 68>5 :876 7@ EAE 5 J75;<E5 B<7@A @95;7@A$> 5 88F ' 5; 5 ;8 8@5 ;7 ' AE7B8 8@@8@ 5< :8C<@@<75:80 @B 5; 5 5;8 6 558:'F B8 5;8 ><66<J7@A:8G<:5 5< ;7 '8F G6<98:'0K Z 8::0 ' ; ?8 8L F7@8B 5;8 F<E@5 7@ C :8>E669 @B >7@B 75 F<:8 B7>>7CE65 @B B @A8:<E '5; @ ' ; B7F A7@8B$;8:8 7 ' @< G6 C8 EG<@ 75 J;8:8 J8 C<E6B J866 G '5;8 @7A;5$) 8 F7A;5 B< <<@ 9<@B8:' <6 EG<@ 5;8 @<J0 =E5 5;8:8 J8 ;<E6B =8 6F< 5 >:<S8@ 5< B8 ;0 @B 5<5 669 :F>75 ><:'5;8 J<:I <> 5;8 @8L5 B 9$ @ 5;8 :<CI '5;8:8 7 ' @< 68BA8 <:' C: @@9 J;7C;' C<E6B A7?8 E ' G:<G8:' ; :=<E: A80 @B 5 :57@A >:<F :8E76 75 7 ' C8:5 7@69 7F G< 7=68 5< :8 C;'5;8 EF F75 7@ ' 7@A68 B 9$3 Z ' J ' 8@57:869 5 I8@ = CI03 9 ' 9@B 660 Z=9 5;7 ' :8G<:5$ ' >865 67I8 ' F @ J;< 8 A:7G ; B A7?8@ J 90 @B J;< J 'B:<GG7@A 5;:<EA;'5;8 7:$ $ $ $ 8@@8@ J '8?7B8@569 Yi8 B A 7@ 5 @9 558F G5 EG<@ 5;8 F<E@5 7@$ ć) 8 C @0 5 66 8?8@5 0 :8 C;' 5;8 6<J8:'<> 5;8 5J< EF F75 0R ':8F :I8B$ ć ?8@ 5; 5 7 'B7>>7CE650R ;8 :8G678B 0 ć=E5 J;8@ 9<E ; ?8 :8 C;8B 750 J; 5 5;8@ ;8 G8 I' ; '@875;8:'@ F8 @<:'> F8$P3+]

P 9'8 2 ' 0 G$ Q$ >' 88 G$ 1$

5' 2 '' ' 0 GG$ 1$ 9@B 66 @B 8@@8@ J8:8 F7 5 I8@ 7@ EGG< 7@A'5; 5'5;8 F<E@5 7@ ; '5J< EF F75 '0 75 ; '<@69'<@8$;89 88F'5< ; ?8 =88@ B8C87?8B =9'5;8 GG8 : @C8 <>'5; 5'G :5 <>'5;8 <E5; J8 5':7BA8 J;7C;'7 'C 668B Z'5;8 ;<E6B8:'3 M RBG E68N0 ' 88@'>:<F' :876$ (78J8B'>:<F'5; 5'G6 C80 75 ' <E5;8:@ 8@B ; 'C8:5 7@690 5;:<EA;'><:8 ;<:58@7@A0 5;8 8F=6 @C8 <> 'G8 I'0 ;E5 J;8@ <@8 :8A :B '75'>:<F'5;8 <6 ;8<BE680 <:'>:<F' @9'G6 C8 7@'5;8 F8 B7:8C57<@0 5;8 B86ED 7<@7 ' 5'<@C8 GG :8@5$

! " "(!' ! ' 4 ' (!

' J ' F<:8' E:G:7 8B' 5; @' B7 C<E: A8B' ;9' 5;7 ' :8G<:5' ;9' <@@8@$ @8' ; 6>' <>' :7' 8:57<@ ' ' I@8J'5<' =8' J:<@A$;8' <6' 5<' J;7C;' ;8' :8>8::8B' J ' 5;8' <6' BE' 7<@0' EG<@' J;7C;' J8' ; B' G 8B' '@7A;5' 68 ' 5; @' ' J88I' >58:' ;8' ; B' G<I8@' <' E5;<:75 57?869'0 @B' ' ; B' 88@' 'G6 C8' @<5' > :' =86<J'5;8' Z' ;7F@8903K ' G6 C8' =<E5' ' >885' =<?8'5;8' <6K0J;8:8'75' 88F8B' G< 7=68'5<' C<@ 5:EC5' ' 688G7@A ' G6 C8$ 8@@8@R' <G7@7<@ ' 88F' 5<' ; ?8' E@B8:A<@8' ' C<FG6858' C; @A8$ @' ' ;8'7 ' B8 C:7=8B' ' ; ?7@A' =88@' 8@5;E 7 57C'5< F I8' @' 558F G50 7@' ' ;8' J ' B8 B' A 7@ 5' <@8$ <5;7@A' B7 F 98B' =9' 5;7 0 F9' >:78@B' :$ 8A7@ 6B' CB<@ 6B0' <E:' C<FD G @7<@' <@' 5;8' 86?<EL K5<' J;<F' <' FEC;' <>' <E:' ECC8 ' ; B' =88@' BE80' A:88B'5<' !<7@' F8'7@' ' :8@8J8B' E65'>:<F'5;8' <E5;0 @B0' 65;<EA;' J8'> 768B' 5<' 8CE:8' 86C;7<:' @B8:8AA' @B' <F8' <5;8:' @<5 =68' AE7B8 0 J8' <=5 7@8B'5J<' F8@' <>' :8GE580' @ F8690' .<; @@' SEF' EAJ 6B' @B' .<; @@' U:<@7A0' <>' V8:F 55$) 8' F85' 5'5; 5' G6 C8' 8 :69'7@' .E690' =E5' 5<:F9' J8 5;8:' G:8?8@58B' E ' 8?8@' >:<F' C:< 7@A'5<' 5;8' <5;8:' 7B8' <>' 5;8' C; 7@' ><:' <F8'57F8$) 8' C:< 8B' 5;8' <6 ;8<BE68' <@' 5;8' 5;0 =E5' 5;8' J8 5;8:' J ' 5;<:<EA;69' E@ 85568B K75' J ' : 7@7@A' 7@' 5;8' ? 6689 0 @B' @<J7@A' EG<@' 5;8' F<E@5 7@ $;<:569'=8><:8' J8' A 7@8B' 5;8' EF F75' J8' J8:8' F B8' 8L5:8F869' E@C<F><:5 =68' =9' ;8 :7@A' F9 58:7<E 0 :E ;7@A' <E@B 0 J;7C;' <F857F8 ' 88F8B' '7>' ' EBB8@' AE 5'<>' J7@B' J ' J88G7@A' 6<@A'5;8' @<J0 @B0 5' <5;8: 0 6F< 5'67I8' 5;8' J7 ;7@A'<>' ' 6<@A' J;7G'0 985'5;8' @<J'8L;7=758B' @<' 7A@ ' <>' F<57<@0 @B' 5;8' 7:' J ' G8:>8C569'C 6F$;8'B8@ 80 =6 CI' 5<:F C6<EB ' F B8'E ' F<F8@5 :769' 8LG8C5' 5; 5' <E:' =<B78 ' F7A;5'=8' E 8B' ' 67A;5@7@A C<@BEC5<: 0 @B' J8' J8:8' J866' 57 >78B'5<' A85' E@B8:' ;8658:' <>' 5;8' 7@@' 5' :8760' J75;D <E5' ; ?7@A' E=F7558B'5<' @9' EC;' 8LG8:78@C8$P

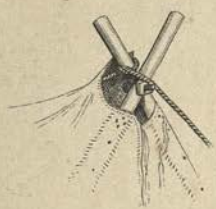
P' ;8' 6 58' 7 7@C7G 6' 4<:=8 ' J ' 7F76 :69' 75E 58B' J;768' C:< 7@A' 5;8' F8' G ' 7@' 2Q$ 8' B8 C:7=8B'5;8' <E@B ' ':E 567@A0 >7SS7@A0 @B' ;7 7@A$ 88' ;7 ' ' ' $ ' ' &' ! ' 8C<@B' 8B$0 G$ Q $:$ 0% G8@C8') 5 <@' 8LG8:78@C8B' 5;8' F8' EG<@' 5;8' EGG8:' G :5' <>' 5;8' 685 C;' A6 C78:'7@' .E69' 0 @B' ;8' G<I8' <>' 5;8' <E@B ' ' 7@A7@A' <:' ;7 7@A$ 88' 5;8' $ 2 ' 8G5$ Q0' $;8' :8 G8C57?8' G :578 ' 88F' 5<' ; ?8' =88@' ;7A;69' 868C5:7>78B' <@' 8 C;' <CC 7<@$ 4<:=8 ' 9 '5; 5';7

) 8+; B@88B' <>' ' G<:58:0 @B0 =9'5;8' B?7C8' <>' <E:'6 @B6<:B0 B8 C8@B8B'5<'5;8'C; 685'<>' :876 7@' 8 :C;'<>'<@8' EC' 89@85$) 8' ><E@B' ;7' ;<E 8' ' F8 @' =<B80 8@CEF=8:8B' J75;' C;88 8 F I7@A' GG : 5E 0 @B'58@ @58B'<@69'=9' <F8'=:7A;5 898B'C;76B:8@0 =E5' ' 5;89' 7B'5; 5' E@C68' EC' J<E6B' <<@' =8' ;<F80 J8' J 758B' 5'5;8' B<<:'<>'5;8'675568'C; 685' @B' J 5C;8B'><:';7F$ 5'6 5' ' G8CI' J ' 88@' C<F7@A' :<E@B' 5;8' C<:@8:'<>'5;8' G 5C;'<>'G7@8' =86<J' :876 0 B'5;8@'5;8'C;76B:8@'C6 GG8B'5;87:'; @B 0 B:<GG8B'5;87:'5<9 0 @B' : @' 8 A8:69'><:J :B'5<'F885';7F$) 8' J' @'E@A 7@69 0 J<==67@A' >7AE:8' 5<<G'B<J@' @B' C 5C;'EG'5;8' ;5568'<@8 0 I7 '5;8F'<@'8 C;' C;88I 0 @B' GE5'5;8F' 7@5<'5;8'8FG59'G @@78:'<@'8 C;' 7B8'<>'5;8' FE68 0 @B'5;8@';8 :B'75'C<F8'<@'C :<667@A 0 '7>'5;7'J '@<5' 'J<:6B' <>'J<8'0 @B'985'5;8'>C8'<>'675568' EC' 89@85 0 5;8';E@C;= CI'<>' :876 0 =<:8'5: C8'<>'5:<E=68' @B' <::<J0 @B'5;8:8'J ' F<:8'5; @' ' 5<EC;'<>' B@8 '7@';7'?<7C8'J;8@';8' 7B'5; 5' ;8'FE5'6<<I' >58:' ;7'=:<5;8:R'C;76B:8@$ 66';7'B7>>7CE6578'J8:80 ;<J8?8:0 5'68@A5;' <?8:C<F80 @B';8' A:88B'5<'!<7@'E'5<'C ::9'5;8'58@5$

@'5;8'G 5' J7@58:' ' ; B'5E:@8B' F9' 558@57<@'5<' 58@5 0 @B' 5; 5' J;7C;'J8'; B'=:<EA;5'J75;'E'J '5;8' :8 E65Y'<>'8LG8:7F8@5' 5<' B8?7 8' <@8' J;7C;' ;<E6B'=8' E>>7C78@569'G<:5 =68'5<'=8'5 I8@' <?8:'5;8'F< 5'B7>>7CE65'A:<E@B0 @B'J;7C;' ;<E6B'C<F=7@8'67A;5@8 ' J75;' 5 =76759$ 5'= 8' J ' !E 5'E@B8:' 7L'>885' HE :80 @B' ' 8C57<@'G8:G8@B7CE6 :'5<'75'68@A5;'J ' @'8HE76 58: 6'5:7 @A680 5;8' 7B8'<>'J;7C;'J8:8' 7L'>885'6<@A$ 5'J ' 7@58@B8B'5<' CC<FF<B 58' ><E:'G8: <@ $ 5'J ' EGG<:58B'=9'><E:' ;'G<68 0 7L'>885' @B' ' ; 6>'6<@A0 @B'<@8'7@C;' @B' ' HE :58:'5;7CI 0 5 G8:7@A'5<'5;8'5<G'5<' @'7@C;' @B' @'87A;5;0 5;8 8' J8:8' ;<B' J75;'7:<@'G<7@5 $;8' <:B8:'<>'G:<C88B7@A'7@'5;8'C<@ 5:EC57<@'<>'5;8'58@5'J ' '><66<J'[K <68'J8:8'B:7668B'5;:<EA;'5;8'G<68' =<E5'>7?8'7@C;8'>:<F'5;87:' 5<G 0 ><:'5;8'7@ 8:57<@'<>'5J<'J:<EA;57:<@'=<65 0 5;:88'7@C;8'6<@A

>7@A8:'Z9786B8B'' >7SS7@A' <E@B03' @B') 5 <@' 9'5; 5';7'Z; 7:' 5<<B'<@'8@B'7@' @ E@C<F><:5 =68';E5'?8:9' FE 7@A'F @@8:03' @B'5; 5'Z5;8'?876<@'5;8'J7B8 J I8'<>' <@8'<>'5;8'G :59' 5<<B'EG:7A;5'7@'5;8' 7:''3

and one quarter of an inch thick. The bolts were then inserted,



and the two pairs of poles were set out (and fixed up by a cord), to the proper dimensions. The roof was then put on. This was made of the rough, unbleached calico called forfar, which can be obtained in six-feet widths, and it was continued round for about two feet, on each side, on to the floor. The width of the material was the length of the tent, and seams were thus avoided in the roof. The forfar was sewn round each pole; par-

ALPINE TENT.

ticular care being taken to avoid wrinkles, and to get the whole perfectly taut. The flooring was next put in and sewn down to the forfar. This was of the ordinary plaid mackintosh, about nine feet square; the surplus three feet being continued up the sides to

G:8?8@5 B: EA;5 $ 5 7 ‘ ‘ J866 5< ; ?8 5J< >8855 <> 5;7 ‘ E:G6E ‘ <@ <@8 7B8 @B <@69 <@8 ><<5 <@ 5;8 <5;8:0 5;8 6 558: F<E@5 =87@A E>>7C78@5 ><: 5;8 7B8 <CCEG78B =9 5;8 >885$ @8 8@B J ‘ 5;8@ G8:F @8@569 C6< 8B =9 ‘5:7 @AE6 :G78C8 <> ><:> :0 J;7C;‘ J ‘ 8J@ B<J@ 5< 5; 5 J;7C;‘ J ‘ 6:8 B9 >7L8B$;8 <5;8:8@B J ‘ 68>5 <G8@0 @B ; B 5J< 5:7 @A:B :>6 G ‘ 5; 5 <?8:6 GG8B 8 C;‘ <5;8:0 @B J;7C;‘ J8:8 > 58@8B EG J;8@ J8 J8:8 7@ 7B80=9G78C8 ‘ <> 5 G8$ 0 569 0 5;8 ><:> : J ‘ @ 768B B<J@ 5< 5;8 G<68 ‘5< G:8?8@5 5;8 58@5 A8557@A <E5 <> ; G8$;8 C<:B J;7C;‘ J ‘E 8B ><: C; F=7@A 8:?8B ><: 5;8 58@50 75 J ‘G 8B <?8: 5;8 C:< 8B G<68 ‘ @B E@B8:@8 5;‘ 5;8 :7BA8 <> 5;8 :<<>0 @B 5;8 5J< 8@B K<@8 ><:8 @B 5;8 <5;8: >5 K J8:8 8 769 8CE:8B 5< G78C8 ‘ <> :<<I$ EC;‘ ‘58@5 C< 5 ‘ =<E5 ><E: AE7@8 0 @B 75 ‘ J87A;5 7 ‘ =<E5 5J8@59 5;:88 G<E@B 0 <:0 7> 5;8 67A;58 5 I7@B <> ><:> : 7 ‘ E 8B0 75 @88B @<5 8LC88B 5J8@59 G<E@B $);8@ 75 J ‘ > 58@8B EG ><: 5: @ G<:5 75 G:8 8@58B 5;8 GG8 : @C8 ;<J@ 7@ 5;8 G<:5: 75 <> 89@85 7@ ; G58: T ($0 @B 75 C<E6B =8 E@:<668B @B 85 EG =9 5J< G8: <@ ‘ 7@ 5;:88 F7@E58 ‘0 ‘ G<7@5 <> @< F 66 7FG<:5 @C8 BE:7@A 8L5:8F8 J8 5;8:$

;7 ‘ 58@5 7 ‘ 7@58@B8B0 @B B G58B0 ><: C FG7@A <E5 5 ;7A;‘ 657D 5EB8 0 <: 7@ C<6B C67F 58 $ 5 7 ‘ @<5 G:858@B8B 5; 5 75 7 ‘ G8:>8C569 J 58:G:<<>0 =@5 75 C @ =8 F B8 < =9 5;8 BB757<@ <> F CI7@5< ;‘ 5< 5;8 :<<>0 @B 5;7 ‘7@C:8 8 ‘5;8 J87A;5 =9 <@69 5J< @B ‘; 6> G<E@B $ 5 7 ‘ 5;8@ >75 ><: A8@8: 6 E 8$P 5 F 9 =8 <= 8:?8B 5; 5 5;8 G 558:@ N 5;7 ‘ 58@5 7 ‘ 7B8@57C 6 7@ 66 8 8@57 6 G<7@5 ‘ J75;‘ 5; 5 ::7?8B 5 M >58: A:8 5 8LG8:78@C8M =9 7: 8<G<6B " 67@5<CI ><: :C57C J<:I0 @B >:8HE8@5 E 8 =9 F @9 G8: <@ 0 E@B8: ? :78B C<@B757<@ 0 ; ;<J@ 5; 5 5;8 G 558:@ 7 ‘ =<5;‘ G: C57C 6 @B E= 5 @57 5

P ‘ ; ?8 B8 C:7=8B 5;7 ‘58@5 5 68@A5;0 ‘>:8HE8@5 GG67C 57<@ ; ‘=88@ F B8 5< F 8 ><: 7@><: F 57<@ <@ 5;8 E=!8C5$ ‘ J<E6B 5:<@A69 :8C<F F8@B @9 G8: <@ J;< J7 ;8 ‘ 5< ; ?8 <@8 ><: 6<@A C<@57@E8B E 80 5< ; ?8 <@8 F B8 E@B8: ;7 ‘ <J@ 898 @B 5< =8 G :57CE6 :69 C :8>E6 5< 58 5 5;8 G<68 $ 9 8LG8:78@C8 A<8 ‘ 5< ;<J‘ 5; 5 G<68 ‘ J;7C;‘ MJ;8@ EGG<:58B EG<@ 5;87:‘ 8L5:8F7578 N J766 =8 : ‘B8 B J87A;5 <> ‘6= $ E G8@B8B >:<F 5;87:‘C8@5:8 0 J766 5 @B @9 J7@B 5< J;7C;‘ 5;89 7 87 I869 5< =8 E=F7558B$;‘7 0 G8:; G 0 5;8 =8 5 J<<B 5; 5 C @ =8 868C58B 0 6 @C8J<<B 7 ‘8HE 669 A<<B0 =E5;8 ?78:$ > ‘ 5; ‘=88@ E 8B0 F<@A 5 <5;8: 0 =9 8 : $ 4:8 ;>786B0 <<:80 @B EC I8:0 7@ 5;8 EC E ‘0 =9 5;8 8?$) $ $ J I8:‘7@ <: 7C 0 @B =9 F9 CB>7@ &:88@6 @B$

E@B 9 5;8 5;' <> .E69 J ' ;<J8:9 @B @<J' >866 <@ 5;8 558:;<:@ =E5 J8 5 :58B <@'5;8><66<J7@A' F<:@7@A' J75;' <E:'5;:88 F8@ @B GE: E8B' F9' :<E58 <>'5;8 G:8?7<E ' 98 :$ ' J ' :8HE8 58B 5<' B7:8C5 5;8 J 9 ' @<@8 ?8 F9 86>';B' =88@' <@'5;8 F<E@5 7@ =8><:8 =E5 ' B7B' @<5 B7 57@AE7 ;' F9 86>' <@'5;7 ' <CC 7<@ @B 68B F9' C<FG @7<@ ' @8 :69 5<' 5;8 5<G' <>'5;8 F 66 G8 I' =8><:8 5;8 F7 D 5 I8 J ' B7 C<?8:8B$;8 G :59 =8C<F7@A' :8=8667<E ' 675568 8&LG6<:' 57<@ J ' F B8 5<J :B ' <E:' :7A;5 @B J8 ><E@B' 5; 5 J8 J8:8 EG<@ 5;8 5<G' <>'5;8 C67>>' <?8:6<<I7@A' 5;8 <6 BE 7<@$;8 EGG8:' G :5 <> 5;8 F 66 G8 I' 7 ' <>' ?8:9 B7>>8:8@5 C; : C58:' 5<' 5;8 6<J8:' G :5 5;8 :<CI ' :8 @<5 <' >7:F @B 5;89 :8 E E 669 C<?8:8B <:' 7@58:F7L8B J75;' @<J @B A6 S8B' J75;' 7C8 [5;8 @A68 5<< 7 ' F<:8 8?8:8$);768 B8 C8@B7@A' ' F 66 @<J 6<G8 5<' A85 <@'5<' 5;8 :7A;5 5: CI U:<@7A' 67GG8B' <@' 5:8 I' <>'7C8 @B J8@5 B<J@' 5 ' >8 :>E6 G C8$ 4<:5E@ 5869 ;8 I8G5 <@';7 ' 68A @B =9 ' A:8 5 8><:5 ECC88B8B' 7@ 5<GG7@A' !E 5 =8><:8 ;8 ::7?8B' 5 <F8 :<CI ' 5; 5 !E558B' 5;:<EA;' 5;8 @<J J;7C;' J<E6B' 7@> 667=69 ; ?8 I@<CI8B' ;7F' <?8:$);8@ J8 :8!<7@8B';7F' '>8J' F7@E58 ' 6 58:J8><E@B' 5; 5 ;8 J ' 7@C G =68 <> 5 @B7@A FEC;' 68 ' <> F<?7@A J75;' '> C8 C<:G 8 67I8 7@ ;E8 @B 5:8F=67@A' ?7<68@569$ 8 :8F 7@8B' 7@'5;7 ' C<@B757<@' ><:' F<:8 5; @' @';<E: @B 5;8 B 9 J ' C<@ 8HE8@569' > :' B? @C8B' =8><:8 J8 ::7?8B' 5' <E:'C FG7@A G6 C8 <@'5;8 <6$:<>757@A' =9'5;8' 8LG8:78@C8 <>' 6 5' 98 :J8 B7B' @<5 G75C;' 5;8' 58@5 C5E 669 <@'5;8 @<J =E5 C<668C58B' 'HE @5759 <>' BB=:7 '>:<F'5;8 @87A;=<E:7@A' 68BA8 @B >58>' C<@ 5:EC57@A' ':<EA;'G6 5><:F' <>'5;8 6 :A8:'G78C8 68?8668B' 5;8 J;<68 J75;'5;8 B7:5 @B' FEB$

89@85 ; B G:<?8B' 7@? 6E =68 ' '58@5 =8 :8: ><:K 65;<EA;' ;7 '68A ' J8:8 F<:8 G7C5E:8 HE8 5; @' 9F F85:7C 6 @B 65;<EA;' ;8 88F8B' 5<' =8 =E765 <@ G:7@C7G68 J75;' @<' 5J<' G :5 ' 67I8K ;7 '?8:9 B8><:F7578 ' G:<?8B' <> 8:?7C8 @B J8 HE7CI69 ><E@B' ;8 ; B' G7:75 <>' @<' C<F F<@' <:B8: @B 5; 5 >8J' G8 @5 ' :8 F<:8 A:88 =68 C<FD G @7<@ <:' =8558:' C67F=8: 5; @' 675568' EC 89@85 5;8' ;E@C;= CI' <> :876$ 8' @<J' ;<J8B';7F 86>' @<5 68 ' 8:?7C8 =68 ' ' C ?8@A8: @B ;EF=69 I8B' ><:' A:7 569 G78C8 ' <>' F8 5 :8!8C58B' =9'5;8' <5;8: <:' ><:' E G7C7<E ' 8AA ' @B 88F8B' 5<' C<@ 7B8:' 75 ' G8CE67 :' > ?<E:

7> @<5 ' 5:8 50 5< =8 G8: F7558B 5< B:7@I' 5;8 C<>>88 A:<E@B $) 75;' 5;8 A:8 58 5 C<@58@5F8@5 ;8 5<<I' 5;8 J<: 5 G6 C8 5 5;8 B<<:' <> 5;8 58@50 @B B7B 66 5;8 B7:59 J<:I' J;7C;' J ' GE5 EG<@ ;7F';9' 5;8 AE7B8 0 ' A: 58>E669 ' 'B<AK J;< ; ' ;88@ J866 ;8 58@K J766 :8C87?8 ' 5:<I8$

' 5:<@A J7@B G: @A EG >:<F 5;8 8 5 BE:7@A 5;8 @7A;50 @B 7@ 5;8 F<:@7@A 75 J ' =6<J7@A 6F< 5 ' ;E::7C @8$;8 58@5 =8; ?8B @<=690 @B J8 :8F 7@8B E@B8:' 75 ' ;8658:' ><:' 8?8: 6 ;<E: ' >58:' 5;8 E@ ; B :7 8@0 E@C8:5 7@ J ; 5 75 J ' =8 5 5< B<$ ' 6E66 58FG58B E ' 5< F<?80 =E5 J8 ; B C :C869 C8@B8B ' ;E@B:8B >885 =8><:8 5;8 5<:F' =E: 5 EG<@ E ' J75;' 7@C:8 8B >E:9$ B? @C8 <:' :85E:@ J ' 67I8 7FG< 7=68 0 5;8 :7BA8 J ' B8@EB8B <> 75 ' B8=:7 ' 0 @B J8 C6E5C;8B <E:' ; :B8 5 J;8@)8 J 5<@ ' ' =7A ' ' F @R ' >7 5 =6<J@ J 9 ;<:7S<@5 669 7@5< G C8$) 8 B :8B @<5 558!@G5 5< 5 @B EG:7A;50 @B :8F 7@8B 5 57<@ :90 <@ 66 ><E: 0 A6E8B0 ' 75 J8:80 5< 5;8 :<CI $ 5 J ' 7@58@ 869 C<6B0 ><:' 5;8 =6 5 ; B J8G5 6<@A 5;8 F 7@ C; 7@ <> 5;8 8@@7@8 6G 0 @B C:< ' 5;8 A:8 5 @<J >786B ' :<E@B <@58 < $ E:' J :F5;' @B C<E: A8 : G7B69 8? G<: 58B0 @B 5 5;8 @8L5 6E66 J8 :85:8 58B 5< 5;8 58@5C ; ?7@A "5< ; 65 8?8: 6 57F8 ' 8?8@ 7@ 5; 5 ;<:5 B7 5 @C8$ EAJ 6B @B U:<@7A 5;8@ B8C6 :8B 5; 5 5;89 ; B ; B 8@<EA;0 @B :8>E 8B 5< ; ?8 @95;7@A*F<:8 5< B< J75;' 5;8 F<E@5 7@$ 89@85 6 < 7@D ><:F8B E ' 5; 5 ;8 J<E6B =8 :8HE7:8B B<J@ =86<J' ><:' 7FG<:5 @5 +88 8 F I7@A <G8: 57<@ ' <@ 5;8 ><66<J7@A B 9$ 5 J ' 5;8:8><:8 @88B>E6 5< :85E:@ 5< :8B0 @B J8 ::7?8B 5;8:8 5 Q$ ' 1 2 (8LD 5:8F869 C; A:7@8B 5 <E:' C<FG6858 B8>8 5$

.8 @ @5<7@8 ::860 55: C58B =9 :EF<E: 0 ; B C<F8 EG 5< 5;8 7@@ BE:7@A <E:' = 8@C80 @B >58:' <F8 @8A<57 57<@ ' A:88B 5< CC<FG @9 E 0 J75;' <@8 <> ;7 ' >:78@B ' @ F8B 8 7<@0 <@ 5;8 >7: 5 >7@8 B 9$) 8 5;<EA;5 <E: 86?8 ' ><:5E@ 58 0 ><:' ::86 C68 :69 C<@D 7B8:8B 5;8 F<E@5 7@ ' I7@B <> ' @B :8A :B8B <E:' 6 58 558FG5 ' @ C5 <> $ '@ ;8 J7@B =68J'75 86> <E5 BE:7@A

P ' =8558:' >8867@A 8L7 5 ' 5 5;8 G:8 8@5 57F8 7@ 5;8 (6 <E:@ @<;8 7@ :8A :B 5< 5: @A8: $ @ Q 5;8 !8 6<E 9 <> 5;8 @ 57?8 ' 5<J :B ' 5;87:' J7 ' @87A;=<E: ' J ' <>58@57F8 ' 8L5:8F869 FE 7@A0 65;<EA;' 8F= :: 7@A$

5;8@7A;5 @B J8 5 :58B A 7@ J75;'5;8 85J<F8@ @B ' G<:58: 5 ' $ $ <@5;8 5;J75;'@@8LC8G57<@ =68 J8 5;8:$ ::86G68 8B E'=9 EAA8 57@A'5; 5'J8 ;<E6B'C FG'8?8@ ;7A;8:'5; @'=8><:8J 0 @B J8 CC<:B7@A69 G:<C88B8BJ75;<E5 :8 57@A' 5 5;8 <6 E@576 J8 <?8:5<GG8B'5;8 858 BE' 7<@$ %8 :'5;8'><<5 <>'5;8 Z ;7F@8903 ' 675568'=86<J'5;8 C:8 5 <>'5;8 :7BA8 @B'<@'75 '8 58:@' 7B8 J8 ><E@B ' G:<58C58B G6 C8 0 @B'=9 =E76B7@A EG >:<F'68BA8 5<'68BA8 ME@B8:' 5;8 B7:8C57<@'<>' <E:' 68 B8:J;<J ' ' F <@'=9 G:<>8 7<@N J8 5 68@A5;C<@ 5:EC58B' G6 5><:F' <>' E>>7C78@5 7S8 @B' <>' C<@ 7B8: =68 <67B759$ 5 ' ;87A;5 J ' =<E5 Q0 ' >885 =<?8 5;8 8 '0 @B'75 8L7 5 ' '=8678?8 5 5;8 G:8 8@5 57F8$P) 8 5;8@'GE ;8B'<@ '5;8 B 9 J '?8:9'>7@8 @B >58:' ' ;<:5';<E:R' C: F=68 A<5 5<5;8><5 <>'5;8 &:8 5 <J8:'EG<@'5;8 :7BA8 M5; 5 7'5< 90 5< :$ J I7@ R > :5;8 5P G<7@5N @B >58:J :B ' :85FR@8B 5< <E:' =7?<E C$) 8 5E:@8B'<E5 A 7@ 5 2' $ $ @B 5 $ ' 5 :58B EGJ :B ' <@C8 F<:8 J75;'>7@8 J8 5;8:' @B 5;8 5;8:F<F858:' 5 Q `$ ::86 C: F=68B EG'5;8 ;7F@890 @B CB<@ 6B @B ' >58:';7F$ 8 7<@R'5E:@ C F8 =E5 J;8@';8 ::7?8B 5 5;8 5<G ;8 6<<I8B'?8:9'766 B8C6 :8B ;7F 86>'5<'=8 5;<:<EA;69 7@C G =68 @B 7B'5; 5 ;8 FE 5 A<'= CI$) 8 J 758B' <F8 57F8 =E5 ;8 B7B' @<5 A85 =8558:0 @875;8:'C<E6B J8 68 :@'5;8 @ 5E:8 <>';7 '766@8 $ ::86 >6 569 :8>E 8B 5<'A<'<@ J75;' E ' 6<@8$) 8 J8:8 ;86G68 $ CB<@ 6B 8?8:'5;8 C<<68 5 <>'5;8 C<<60 EAA8 58B'5; 5'J8 ;<E6B'5:9) I 5'J8 C<E6B'B<J75;<E5;8F =E5 <E:'=8558:'!EBAF8@5 G:8? 768B @B >7@ 669 J8 :85E:@8B'5<A85;8:' 5< :876$ @'5;8 @8L5 B 9 F 9 >:78@B' 5 :58B ><:' <@B<@$;:88 57F8 ' '; B' 8 98B'5;8 C8@5 <>'5;7 ' F<E@5 7@ @B <@ 8 C;' <CC 7<@' ; B' > 768B' 7A@<F7@7<E 69$ ' ; B' @<5 B? @C8B' ' 9 :B'=89<@B' F9 G:8B8C8 <: $ c G5<'5;8 ;87A;5 <>'@8 :69 0 ' >885 5;8:8 J8:8 @<8L5: <:B7@ :9 B7>>7CE6578 0 5;8 J 9 <'> :' F7A;5 8?8@'=8C<F8 Z ' F 558:'<>' FE 8F8@5$3 @69 ' >885 :8F 7@8B'0

P ;8';87A;5 'A7?8@'<@5;8'<E567@8 '<>'5;8 558:;<:@0 CC<FG @97@A' ; G$7?$0<@ 5;8 A8<6<A7C 6 8C57<@'7@'5;8 GG8@B7L0 @B' HE<58B'5;:<EA;<E5'5;8 =<<I0 :8 >58:' 5;8'= :<F85:7C MF8:CE:7 6N F8 E:8F8@5 '<>' 7A@<:'4$ &7<:B @<'7@' ' @B' $; ?8'?8@5E:8B'5<B7>>8:'>:<F' ;7F' <@69'7@' :8A :B' 5<'5;8' ;87A;5'<>'5;8' 8C<@B' 58@5 ' G6 5><:F0 @B' ; ?8' 7A@8B'5<'75' ' <F8J; 5'6<J8:'868? 57<@'5; @' ;7 '8 57F 58$

=E5 5;89 J8:8 '985 E@5:<BB8@ @B F7A;5 !7:8 8@5 5;8 F< 5><:D F7B =68 <= 5 C68 $ %< F @ C<E6B 8LG8C5 5< C67F=5;8F =9 ;7FD 86>$ 'F<: 86 <> :<CI <@69 8?8@ >885 ;7A;' F7A;5 5 @9 57F8 B8>8 5 ;7F 7>75 J8:8 G8:G8@B7CE6 :$ EC;' G6 C8 F7A;5 =8 G< D 7=68 5< 5J< <:' = A 58668 5< 5;:88 F8@$ 5 J '8?7B8@5 5; 5 ' G :59 ;<E6B C<@ 7 5 <> 5;:88 F8@ 5 68 5$ E5 J;8:8 C<E6B 5;8 <5;8:'5J< F8@=8 <=5 7@8B^ ::86 J '5;8<@69F @ J;<8L;7=758B @9 8@5;E 7 F 7@ 5;8 F 558:' @B ;80 7@ 0 ; B = <6E5869 :8>E 8B 5< A< E@68 ' 5;8 G :59 C<@ 7 58B <> 5 68 5& 2 ' G8: <@ $) @5 <> F8@ F B8 5;8 B7>>7CE6590 @<5 5;8 F<E@5 7@$ + ;8 J8 5;8:'=8C F8 = B A 7@0 < ' J8@5 5< V8:F 55 <@ 5;8 C; @C8 <> G7C I7@A EG ' F @0 @B :8F 7@8B 5;8:8 BE:7@A ' J88I' <> 5<:F $P %<5 <@8 <> 5;8 A<<B F8@0 ;<J8?8:0 C<E6B =8 7@BEC8B 5< C<F80 @B ' :85E:@8B 5< :876 <@ 5;8 6 5;0 ;<G7@A 5< C<F=7@8 5;8 I766 <> ::86 J75;' 5;8 J7667@A@8 ' <> 89@85 <@ ' @8J' " 558FG50 =9 5;8 F8 :<E58 '=8><:8 0 ><:' 5;8 B:@67 :7BA80 J;7C;' ' ; B 8L F7@8B 7@ 5;8 F8 @57F80 88F8B 5< =8 8@57:869 7FG: CD 57C =68$ <5;' F8@ J8:8 7@C67@8B 5< A 9 =E5 5;87:' <:B7@ :9 <CCED G 57<@ ' G:8?8@58B 5;8F >:<F 5 :57@A 5 <@C80 5

9 58@5 ; B =88@ 68>5 :<668B EG 5 5;8 8C<@B G6 5><:F0 @B J6776 5 J 757@A ><:' 5;8 F8@ 75 <CCE::8B 5< F8 5; 5 75 F7A;5 ; ?8 =88@ =6<J@ J 9 BE:7@A 5;8 6 58 5<:F9 J8 5;8:'0 < ' 5 :58B <>> <@ 5;8 5;' 5< 88 7>5;7 ' J8:8 < <:' @<5$;8 J 9 J '=9 5;7 ' >7F8 > F767 :0 @B F<E@58B : G7B690 5<@7 ;7@A 5;8 >:78@B69 ;8:B F8@K J;< @<BB8B :8C<A@757<@ ' '>67558B G 5 5;8F' @B 5;8 C<J K><:' ' J ' 6<@8>=8C E 8 @< F @ J ' ? 76 =68$ E5 F<:8 B867=8: 57<@ J ' @8C8 :9 J;8@ 5;8 G 5E:8 ' J8:8 G 8B0 @B C67F=7@A=8A @0 ><:'75 J '@88B>E6 5< F :I'8 C;' 58G0 7@C 8 <> F7 50 <:' E:G:7 8 =9 @7A;5$ 5 7 ' <@8 <> 5;8 >8 J'5;7@A ' J;7C;' C @ =8 7B 7@ > ?<E:' <> F<E@5 7@88:7@A 6<@8 M 'G: C57C8 J;7C;' ; '675568 =8D 7B8 ' 5< C<F F8@B 75N0 5; 5 75 J I8@ ' ' F @R ' > CE6578 0 @B F I8 ' ;7F' <= 8:?8$);8@ <@8 ; ' @< :F ' 5< ;86G0 @B @< ;8 B 5< AE7B8

P ' E:7@A 5;7 ' 57F8 F I7@A 5;8 C8@5 <> <@58 < $
*> ;89 J8:8 @<5 AE7B8 ' =9 G:<>8 7<@$
:

677F' 8LC8G5' ' <J@0' ;8' FE 5' @88B ' 5 I8' @<58' 8?8@' <>' F 66' 5;7@A 0' ><:' ;8' C @@<5' >><:B' 5<' 567:<J' J 9' 'C; @C8' 0 @B' <' 75' C F8' 5< G 0' EG<@' F9' <675 :9' C: F=680' J;8@' =<?8' 5;8' @<J 67@80' @B' =89<@B' 5;8' <:B7@ :9' 67F 75 ' <>' >6<J8:7@A' G6 @5 0' J;8@' G88:7@A' =<E5' @<57@A' @A68 ' @B' 6 @BF :I 0' 5; 5' F9' 898 ' >866' EG<@' 5;8' 57@9' 5: AA67@A' G6 @5 K<>58@57F8 ' ' 7@A68' >6<J8:' <@' ' 7@A68' 5 66CK' G7<@88: ' <>'?8A85 57<@0' 5<F ' <>' 67>8' 7@' ' J<:6B' <>'B8 <6 57<@0' J;7C;' ; B' ><E@B' 5;87:' J 9' EG K J;<' C @' 5866' ;<J'^K>:<F' > :' =86<J0' @B' J8:8' <=5 7@7@A' = :8' E 58@ @C8' >:<F' 5;8' C @59' <76' 7@' G:<58C58B' @<<I ' 0' @B' 75' A ?8' ' @8J' 7@58:8 5'5<' 5;8' J866 I@<J@' :<CI ' 5<' 88' J; 5' ' A 66 @5' >7A;5' 5;8' E:?7?<: ' F B8' M><:' F @9' FE 5' ; ?8' G8:7 ;8B' 7@' 5;8' 558FG5M' 5<' C8@B' 5;8' A:8 5' F<E@5 7@$;8' &8@57 @0' ' <@8' F7A;5' ; ?8' 8LG8C58B0' J ' 5;8:80' =E5' 75' J ' :E@' C6< 8' =9' L7>: A8 0' @B' =9' R ' ' @B' J ' =8 58@' =9' $ ' 2 & 2 ' J;7C;' 6 558:' G6 @5' J ' 5;8' ;7A;8 5' ' J ' =68' 5<' 8CE:80' 65;<EA;' 75' 5<<' J ' <?8:5<GG8B' =9' ' 675568' J;758' >6<J8:' J;7C;' ' I@8J'@<50' @B' J 'E@ =68'5<' :8 C;$P

P' ;<8' J;7C;' 'C<668C58B' J8:8' ' ><66<J$B ' & F$0 1 ' ' $0 (' ' (80 ' " ' $'0 $ ' & 9 ' & EB$0 ! ' 2* ' $ M'M'0 * ' G$0 ! 6& ' ' G$0 ! 6& ' ' 2 ')E6>$' F' 7@B8=58B' ><:' 5;8 8' @ F8 ' 5<' :$ ") 7667 F' ::E5;8: ' <>' 5;8' :757 ;' E 8EF$' ;8' G6 @5 ' : @A8B' >:<F' =<E5' 0 ' 5<R ' 675568' =86<J' 0 ' >885' @B' :8' 5;8' ;7A;8 5' J;7C;' ' ; :8' 88@' @9J;8:8' 7@' 5;8' 6G $' ;:88' 57F8 ' 5;7 ' @EF=8:' <>' G8C78 ' F7A;5"=80' C<668C58B0' ' ; ?8' @<' B<E=50' JB5;7@' 5;8 8' 67F 75 $' ' "@ ' @<5' 8@B8 ?<E:7@A' 5<' F I8' ' & ' <>' 5;8' 558:;<:@0' =E5' 5<' <=5 7@' 5;< 8' G6 @5 ' J;7C ' 55 7@8B' 5;8' A:8 58 5' ;87A;5$ (8:9' >8J' 67C;8@ ' :8' 88@' <@' 5;8' ;7A;8:' G :5 ' <>' 5;7 ' F<E@5 7@' 0 5;87:' : :759' 7 ' BE80' B<E=568 0' 5<' 5;8' C<@ 5 @5' B7 7@58A: 57<@' <>' 5;8' :<CI 0' @B' 5;8' C<@ 8HE8@5' 8LG< E:8' <>' >:8 ;' E:> C8 $! ' 2 ' J ' 5;8' ;7A;8 5' G6 @5' ><E@B' =9' ' 8' E 77:8' <@' ;7 ' 5: ?86 ' 7@' 5;8' 6G 0' 8' F8@57<@ ' MdQ M' 5; 5' ;8' ><E@B' '5E>5' Z@8 :' 5;8' G6 C8' J;8:8' ' 68G5' <@' F9j:85E:@' M>:<F' 5;8' C8@5' <>' <@5' 6 @CN0' =<E5' 1 '5<7 8 ' M 0 ' >885M' =<?8' 5;8' 68?86' <>' 5;8' 8 $3

:$) 7667 F' 5;8J ' @B' :$; :68 ' <I8' J;<' ; ?8' =<5 @7 8B' :8 G8C57?869' ><:' F @9' 98 : ' 7@' 5;8' 6G ' @B' 9:8@88 0' ; ?8' > ?<F8B' F8' J75;' 5;8' @ F8 ' <>' 5;8' ;7A;8 5' G6 @5 ' 5; 5' 5;89' ; ?8' <=5 7@8B' EG<@' 5;87:' 8LCE: 7<@ $' ;87:' 67 5 0' 65;<7:A;' @<5' 8L58@ 7?80' :8' 7@58:8 57@A' ' ;<J7@A' 5;8' 8L5:8F8' 67F 75 ' 55 7@8B' =9' <F8' <>' 5;8' ; :B78 5' <>' 6G7@8' G6 @5 $' ;<8' F8@57<@8B' =9' :$ 5;8J ' :8K 2 ' ' M<@' 5;8' &:7?<6 0' Q0 21' >885M' 0 ! 6& ' ' $ ' @B' $7 6 ' ' M<@' 5;8' EF F75 ' <>' <@5' F767E 0' 0 110' @B' 5;8' @75<:0' 02 M' ! 2 R2

;8' 58@5' J ' >8D' 65;<EA;' @<J8B' EG'D @B' '5E:@8B' 5<' C<@D 58FG6 58' 5;8' ?78JD' J;7C;D' J;8@' 88@' 6<@8' @B' E@B7 5E:=8BD' ; B' 66' 5;8' 5:8@A5;' @B' C; :F' <>' C<FG6858' @<?8659$P' ;8' ;7A;8 5' G8 I ' <>' 5;8' 8@@7@8' C; 7@' J8:8' 7@' >:<@5K 5;8' :875;<:@' M 0 ' >885ND' 5;8' 9 I FF'M 20 ND' @B' <@58' < 'M 0Q 1ND' 5;8@D' 5E:@D 7@A' 5<' 5;8' :7A;5D' 5;8' 8@57:8' =6<CI' <>' F<E@5 7@ ' J;7C;' 8G : 58B' 5;8' (6' <E:@ @C;8' >:<F' 5;8' (6' BR 9 ' J ' 88@' 5' 'A6 @C8D' J75;' 75 ' B<F7@ 57@A' EF F75' 5;8' &: @B' <E:@ 67@' M660 >N$' 8;7@B' J8:8' 5;8' : @A8 'B7?7B7@A' 5;8' 6' BR 9 '>:<F' 5;8' (6689' <>' &:8 ' <@89D' = CI8B'=9' ;7A;8:' EF F75 $ <:8' 5766' 5<' 5;8' :7A;5D' 5;8' 898' J @B8:8B' B<J@' 5;8' 8@57:8' 68@A5;' <>' 5;8' (6'" <E:@ @C;8D' @B' 5;8@' :8 58B' EG<@' 5;8' &: 7 @' 6G ' J75;' 5;87:' 7@@EF8: =68' G8 I D' @B' EG<@' 5;8' 7 <6 58B' G9: F7B' <>' <@58' (7 <' M Q0 2 N' 7@' 5;8' 8L5:8F8' B7 5 @C8$' %8L5D' 5766' 5E:@7@A' 5<' 5;8' :7A;5D' C F8' 5;8' F<E@5 7@ ' 3 # '' (#(' *) ' +@B 5-(#$ (! ' 8))! 'M<.7 <@58' (7 <D' >:<F' 0 '5<' 0 ' >885ND' '* ' (%$! 0% ' @B' 2 0(3 ' 8%(' M <@58' (7 <D' =<E5' ' >885ND' @B' * ..' (%!)" 0% ' M^ND' ($# ' '' * . $ ' M) E6>$ND' (%) . ' ,%(.! ' @B' 5#$(%. '' 5-(.) .)' M <6' B8' 8967 8:8 D' Q 1N$ 0 :$ CI8' <=5 7@8BD' <@' <:' C6< 8' 5<' 5;8' EF F75' <>' 5;8' 7C' B8' E6; ; C8@D' 78:: ' 8: B D' <>' &: @ B ' M 0 ' 5<' 01 ' >885ND' 5 * :#(' *)! ' M(:$ 5-(.) .! ' ($# ' ' #: "#)' '' ME 8B' ><:' A7?7@A' 5;8' >6 ?<E:' 5<' 5;8' @S @766 ' ;8::9ND' % ' #: "#)' '') ' 5-(#) .! ' ('#$)' 3 . $#' &#' #. ' #(#)$. ' 2 0(3 ' ($. ' M9 :$ '$ ' (3#(%)' *)! ' M? :$ 3 " #' @B' (#) (' $#$(46!#$(' @' 5;8' 7C C;<' B8' (8685 ' M 0 '>885ND' @B' <@' 5;8' 6C S = ' M 0 ND' 5;8' F8' G6 @5 ' J8:8' <=5 7@8BD' J75;' 5;8' 8LC8G57<@' <>' 5;8' >7: 5' @ F8B$ 5' ' ;87A;5' <>' Q 0 '>885' <@' 5;8 8' F<E@5 7@ ' ;8' 6 <' C<668C58B' 5$ %$(. ; '*!(* (#! ' #* " ! ' '$- $! ' @B' '# $# '' 2 $ 'C' @BD' 5' 0 '>885D' -'' ! '' * # $! ' @B' 4' "#('' '.%(" %"#' ' :$ CI8' F8@57<@ ' 5;8' ><66<J7@A' G6 @5 ' ' <CCE::7@A' 5' ' 5<' 0 '>885' 7@' 5;8' 9:8@88 '[K #('$! ' $ 0% ' ,(1 ' #) #(3 ' !$4' .)' ' *) ') (' *) ' 2-('(#) 0%('')!)2! !''3 . '' 2 0(3 ')#(:%' ' '%**%' $ 0% ' ' (.#))" . ' $ $.#' (#) ' #(%) . ' *)

@><:F 57<@' <@' 5;8' =<5 @9' <>' 5;8' (6' <E:@ @C;8' 7 'C<@5 7@8B' 7@' 5;8' 675568' G FD G;685' =9' 5;8' @<@' &$ ::86D' 8@57568B' ' #' "# $%()#). #')' 1' D @B' '67 5' <>' 5;8' G6 @5 ' J;7C;' ; ?8' ;75;8:5<' =88@' C<668C58B' <@' 5;8' A6 C78: E7:<E@B8B' :7BA8' M4E:A8@' &: 5N' C<@@8C57@A' 5;8' 558:;<:@' J75;' 5;8' <6' ;8<BE68D' J766' =8' ><E@B' 7@' '<66>E E 85R' (!2'*%!(' !"#. '' .#(''?<6$?777$ G :5'>7: 5D' $ P' 88' 5;8' F G' <>' 5;8' ? 6689' <>' V8:F 55D' 85C$ D 5; 5'<>' 5;8' (6G8667@8D' 85C$ C @B' 5;8' A8@8: 6' :<E58' F G$ 5' @' 5;8' E5;<:759' <>' @<@' ::86$

7@58:?8@7@A =85J88@ 5678 (6 <E:@ @C678 @B 5;8$(6 :5;868F9 0 <@5 <E 'M ':<E@B 5<GG8B @<J9 EFF750 J C67 88F ' <7FG<:5D @5 >:<F :8760 =E5 J ;7C67 7 '7@ :8 6759 <@69 '=E55:8 '<>5;8 ;7A;8: F<E@5 7@0 5;8 ;d058 E B8 ' ' F8 N0 ; B 6<@A A< 7FI0 @B 5;8 898 G 8B <?8:750 C :C869 ;88B7@A 75 '8L7 58@C80 5< 5;8 8CC ' /8 M<:0 '75 7 'G:7@58B <@5;8 F G$ 88 B8 68N0K ' F7@7 5E:8 558:;<:@K @B 5< <5;8:0 @B F<:8 7FG<:5 @5 ;87A;5 $;8@5;8 A: @B F ' <>5;8 ' 8@5 BR 8:8@ 'M 01 2N 5<GG8B 5;8 J 9 0 '@<=68 F<E@5 7@0 8@C:E 58B <@ 75 '@<:5;8:@ 6<G8 ' J75;' 8@<:F<E ' ; @A7@A A6 C78: 0 J;7C;' =:<I8 J 9 5 F7B B 9 7@ 7FF8@ 8 ;<8 0 @B 5;E@B8:8B B<J@ <@ 5< 5;8 78>8@F 558@ A6 C78:' 0 @B 6 5690 F< 5 G68@B7B <> 660 C F8 5;8 ' 8@5 6 @C;8 M 20 N0 < :7@A =<?8 5;8 = 7@ <> 5;8 A:8 5 VR E55A685 C;8:$ EC;' '?78J'7 ' ; :B69 5< =8 F 5C;8B 7@ 5;8 6G 0 @B $ '?78J'7 '?8:9 : :869 88@0 ' ' J'750 G8:>8C569 E@C6<EB8B$P

P ' 67 ?8 6:8 B9 ; B <CC 7<@ 5< F8@57<@ 5;8 : G7B C; @A8 ' J;7C;' <CCE:'7@ 5;8 J8 5;8:' 5 C<@ 7B8: =68 868? 57<@ '7@ 5;8 6G 0 @B ; 66 ; ?8 5< B< < A 7@ 7@ E= 8D HE8@5 C; G58: $ %< <@8 C @ :8A:85 F<:8 5; @ F9 86> 5;8 ? :7 =68 J8 5;8:' J;7C;' 7 785 ' 5; 5 <5;8:J7 8 B867A;5>E6 C; 7@ <> F<E@5 7@ 0 <:' 5;8 @8C8 759 <> G8 I7@A =<E5 75[75 ' EF6@75 ' GG8 :' 5< 8@!<9 F<:8 5; @ 5;87:' > 7:' ; :8 <> J7@B @B 58FG8 5 $ 858<:<6<A7C 6 B7 5E:= @C8 0 75 J<E6B 88F0 :8 =9 @< F8 @ '@8C8 :9 CC<FG @7F8@5 '<>';7A;' :8A7<@ $;8:8 :8 <F8 ; GG9 G6 C8 ' J;7C;' :8 7B 5< =8 > ?<E:8B J75;' 6F< 5 G8:G85E 6 C 6F$ I8 5;8 C 8 <>5;8 78:: '%8? B '<> 67 0 ><:@7 0 ><:' 8L FG680 J;7C;' 7@C6EB8 '@EF8:<E ' EF F75 ' >:<F 0 '5< 0 '>885$:$) ;75@89 <> @ : @C7 C<0 9 'M7@ ;7 ' 2 =$ ' ' $ '< ' 1 ' ' $' G ' ' 0 'H 5';7A;' 6575EB8 0 66 5;:<EA;' 5;8 F<E@5 7@ 0 5;8 J8 5;8:' BE:7@A 5;8 EF F8:'7 ' 6F< 5 6J 9 '5;8 >7@8 5 G< 7=68 ><:'5: ?8667@A$;8:8 :8 <CC 7<@ 6 5<:F ' 7@ 5;8 ;7A;' F<E@5 7@ '0 ;E50 7@ <:B7@ :9 8 <@ 0 5;8 8 :8 HE758 : :80 @B <@8 <>5;8 A7 8 58 5 B: J= CI '5< 5;8 G68 E:8 <>5: ?8667@A 7@ 5;8 6G 0 5;8 E@C8:5 7@59 <> 5;8 J8 5;8:0 7 ';8:8 6F< 5 8@57:869 J @57@A$3 5 ! 'G:<= =68 5; 5 ' F<:8 5;<:<EA;' CHE 7@5 @C8 JA75;' 5; 5 :8A7<@ J766 F<B7>9 5;7 <G7@7<@ C ><:'75 FE 5 =8 BF7558B 5; 5 75 7 '?8:9 B75>7CE65 5< !EBA8 <>5;8 5 58 <>5;8 5F< G;8:8 <>A:8 5 ;87A;5 '>:<F 5;8 ? 6689 0 @B 75 <>58@ <CCE: '5; 5 '58::7>7C 5<:F 7 ': A7@A =<?8 J;8@5;8:8 7 ' B8 B C 6F =86<J0 5 'B7 5 @C8 G8:; G '<>@<5 F<:8 5; @5;:88<:><E:' F768 $ 'C 8<>5;7 ' I7@B 7 'B8 C:7=8B 7@ ; G58:'?77$0 @B @<5;8:' F 9 =8 F8@57<@8B ;8:8$ 5 5;8 ?8:9 57F8 5; 5 ' J ':8A :B7@A 5;8 ' 8@5 6 @C;8 >:<F ';87A;5 <> Q0 '>885 <@ 5;8 558:;<:@0 :$ $ $ U8@@8B9 JR ' 8@A A8B 7@ F I7@A 5;8 >7: 5 C8@5 <> 5;8 ><:F8:' F<E@5 7@0 @B ;8 B8 C:7=8B ;7 ' C8@5 7@ '?8:9 G7C5E:8 HE8 G G8:'7@ 5;8 '8 2 'M N$ '68 :@ >:<F'75 5; 5 ;8 8$?G8:78@C8B 8?8:8 J8 5;8:$ Z ;8 J7@B :< :8B <?8:'<E:' :7BA8$

<675 :9 C: F=67@A <?8:' 'G:8559 J7B8 :8 ' ; B ;<J@ F8 5; 5
' 7@A68 7@B7?7BE 6 2>87 E=!8C58B 5< F @9 B7>>7CE6578 ' J ;7C;' B< @<5
$ ' "' 0 " 5:<E=68 'G :59 <> 5J < <:' 5; :88 F8@0
@B 5; 5 5;8 B7 B? @5 A8 ' <> =87@A
6<@8 :8 F<:8 >865 J ;768 B8 C8@B7@A
5; @ BE:7@A 5;8 C8@5$ @ <:B8:'
5< @8E5: 67 8 5;8 8 7@C<@?8@78@C8 0 '
B8?7 8B 5J < 675568 GG67 @C8 0 J ;7C;'
J8:8 @<J' =:<EA;5 7@5< E 8 ><:' 5;8
$>7: 5 57F8$ @8 J ' 'C6 J K ' I7@B <> A: G@86
*K =<E5 >7?8 7@C;8 ' 6<@A0 F B8 <> ;8 :' 5886 0
<@8 >7>5;' <> @ 7@C;' 5;7CI$;7 ' J ' <> E 8 7@ B7>>7CE65
G6 C8 ' J ;8:8 5;8:8 J ' @< ;<6B J75;7@ :FR ' 68@A5;0 =E5
J ;8:8 5;8:8 J8:8 C: CI ' <:' 68BA8 ' <F8 B7 5 @C8 ;7A;8:$
5 C<E6B =8 5ECI' <@ 5;8 8@B <> 5;8 6G8@ 5<CI' @B B:<GG8B 7@5<
EC;' G6 C8 0 2 <@ 8L5:8F8 <CC 7<@ 0 >6E@A EG E@576 75 55 C;8B 75 86>
5< <F85;7@A$;8 8BA8 ' 5; 5 6 7B ;<6B <> 5;8 :<CI ' J8:8 8:: 58B0
J ;7C;' 58@B8B 5< F I8 5;8F C 5C;' F<:8 :8 B769 [5;8 <5;8:' 8@B ; B
' :7@A 5< J ;7C;' ' :<G8 J ' > 58@8B$ 5 FE 5 @<5 =8 E@B8: 5<<B
5; 5 5;7 ' J ' 8FG6<98B ><:' ; E67@A <@8R 86> EG ><:' @9 A:8 5 B7 D
5 @C8 =E5 5; 5 75 J ' E 8B 7@ C8@B7@A0 5 5;8 F< 5 ><:' <@69 ' >8J'
9 :B ' 5 ' 57@ 8$ @ B8 C8@B7@A0 ;<J8?8:0 75 C<E6B =8 G:EB8@569
E 8B ><:' A:8 58:' B7 5 @C8$ 5 ' 57F8 0 ' 5;8 C6 J ' C<E6B =8 G6 @58B
>7: F690 =E5 75 J ' @8C8 :9 5< I88G 5;8 :<G8 5 E5 @B 5;8 GE66"
C<@ 5 @569 7@ 5;8 B7:8C57<@ <> 5;8 68@A5;' <> 5;8 7FG68F8@50 <5;8:D
J7 8 75 ; B ' 58@B8@C9 5< 67G J 9$;8 8C<@B B8?7C8 J '
F8:869 ' F<B7>7C 57<@ <> ' B<BA8 G: C57 8B =9 66 C67F=8: $ 5 7 '
>:8HE8@569 @8C8 :9><:' ' 7@A68 F @M<:'><:'5;8 6 5 F @'<>' 'G :59N
BE:7@A ' B8 C8@50 5< F I8 ' 6<<G 7@ 5;8 8@B <> ;7 ' :<G80 J ;7C;' ;8
G 8 ' <?8:' <F8 :<CI 0 @B 5< C<F8 B<J@ ;<6B7@A 5;8 >:88 8@B$
;8 6<<G 7 ' 5;8@ !8:I8B <>0 @B 5;8 G:<C8 ' F 9 =8 :8G8 58B$ E5
' 75 <F857F8 '; GG8@ ' 5; 5 5;8:8 :8 @<:<CI ' 5 ; @B J ;7C;' J 766
66<J' '6<< 8 6<<G 5< =8 E 8B0 ' 67G I@<5 ; ' 5< =8 :8 <:58B 5<0 @B
5;8 :<G8 7 ' B: J@ 7@ 57A;569$ <@ 8HE8@569 75 J 766 <CCE:' 5; 5 75 7

= 5568F8@58B' J 66' 68 B 'EGJ :B ' 5<' 5;8' C75 B86$P' 88@' >:<F' 5;8'
;8<BE68' G 0' 75' 6<<I ' <@69' @' 7@ 7A@7>7C @5' G7@@ C680' ;E5' ' <@8'
GG:< C;8 ' 75' M<@' 5;8' :7BA8M' <' 75' 88F ' 5<' :7 80' @B0' J ;8@' <@8' 7 ' 5'
75 ' = 80' 75' C<FG685869' C<@C8 6 ' 5;8' EGG8:' G :5 ' <>' 5;8' F<E@5 7@$'
' ><E@B' ;8:8' ' E75 =68' G6 C8' ><:' 5;8' 58@50 J ;7C;0' 65;<EA;' @<5' <'
J866' G:<58C58B' ' 5;8' 8C<@B' G6 5><:FG< 8 8B' 5;8' B? @5 A8' <>'
=87@A' ' >885' ;7A;8:'EG0 @B' > C7@ 58B' =9' 5;8' J76B@8 ' <>' 5;8'
C67>> 0' @B' 8@57C8B' =9' 5;8' G8:>8C57<@' <>' 5;8' J8 5;8:0' ' J8@5' <@'5<' 88'
J; 5' J ' =8;7@B$

;8' >7: 5' 58G' J ' 'B7>>7CE65' <@8' 0 5;8' :7BA8' =8C F8' B7F F7 678B'
5<' 5;8' 68 5' G< 7=68' J7B5; K 75' J ' ; :B' 5<' I88G' <@8R ' = 6 @C8 K @B+
!E 5' J;8:8' 75' J ' @ ::<J8 50' ' F<:8' 5; @' G8:G8@B7CE6 :' F ' = ::8B'
5;8' J 9$' %<5;7@A' > 7:69' J75;7@' :FR ' :8 C;' C<E6B' =8' 6 7B' ;<6B' <>0
75' J ' @8C8 :9' 5<' G:7@A' EG0' @B' 5;8@' 5<' ; E6' <@8R 86>' <?8:' 5;8'
; :G' 8BA8' =9' ;88:' 5:8@A5;$' :<A:8 7<@' B7:8C569' EGJ :B ' J '
5;8@' 7FG< 7=68$' @<:F<E ' @B' GG 667@A' G:8C7!:7C8 ' G6E@A8B'
B<J@' 5<' 5;8' 78>8@F 558@' A6 C78:' <@' 5;8' 68>50' =E5' :<E@B' 5;8' :7A;5 '
; @B' 7B8' 75' J ' !E 5' G< 7=68' 5<' A<$' @8' ;7@B: @C8' 5;8@' ECC88B8B'
@<5;8:0' @B' FEC;' 57F8' J ' C<@ EF8B' 7@' 88I7@A' 5;8' J 9$' ' ; ?8'
' (7?7B' :8C<668C57<@' <>' 'AE669' <>' F<:8' 5; @' E E 6' G8:G68L759' 5' 5;8'
7B8' <>' 5;8' &:8 5' <J8:0' J75;' F7@E58' 68BA8 ' @B' 588G' J 66 ' 0 <>' 5;8'
68BA8 ' BJ7@B67@A' B<J@' @B' 5' 6 5' C8 7@A0 @B' <>' >7@B7@A' F9 86>0'
J75;' :F ' @B' 68A ' B7?8:A8@50' >7L8B' ' 7>' C:EC7>78B0' G:8 7@A' A 7@ 5'
5;8' :<CI0' @B' >8867@A' 8 C;' :7 8' @B' > 66' <>' F9' C;8 5' ' ' =:8 5;8B' C
<>' C:8J7@A' F9' ;8 B' :<E@B' 5<' 6<<I' ><:' ;<6B0' @B' @<5' 887@A' @90' @B'
<>' !EFG7@A' 7B8J 9 ' <@' 5<' 5;8' <5;8:' 7B8$

R 7 ' ? 7@' 5<' 558FG5' 5<' B8 C:7=8' EC;' G6 C8 $') ;85;8:'5;89' :8'
I85C;8B' J75;' ' 67A;5' ; @B0' <:' J:<EA;5' <E5' 7@' 6 =<:7<E ' B85 760' <@8'
5 @B ' @' 8HE 6' C; @C8' <>' =87@A' F7 E@B8: 5<<B$' ;87:' 8@C; @5:'
F8@5' 5<' 5;8' C67F=8:' :7 8 ' >:<F' 5;87:' C 66 ' <@' ;7 ' > CE6578 0' 7@' 5;87:'
B8F @B ' <@' ;7 ' 5:8@A5;0' @B' <@' <?8:C<FG@A' 5;8' 7FG8B7F8@5 ' J ;7C;'
5;89' <GG< 8' 5<' ;7 ' I766$' ;8' @<@ F<E@5 7@88:7@A' :8 B8:' C @@<5'

P' 8C' 5;8' 8@A: ?7@A' Z : A' <>' 5;8' 558:;<:@03 J;7C;' CC<FG @78 ' ; G$?77$

' 8LG8C5' 5; 5' @9' 7@58667A8@5' C:757C' J766' 7@HE7:8Ø Z' E5' B<' 9<E'
:8 669' F8 @' 5<' 8:5' 5; 5' B @A8: ' 7@' F<E@5 7@88:7@A' :7 8' <@69'
>:<F' EG8:6 57?8' B7>>7CE659' Ø @B' 5; 5' 5; 8' G8:>8C5' F<E@5 7@88:' B<8 '
@<5' :E@' @9' :7 I '^3' ' F' @<5' G:8G :8B' 5<' A<' HE758' <' > :' '5;7 Ø
65;<EA;' 5;8:8' 7 ' <@69' <@8' :7 I' 5<' J ;7C;' 5;8' C: F=68:' <@' 5;8'
7A;8:' 6G '7 'E@ ?<7B =69' E=!8C5Ø J ;7C;' B<8 ' @<5' <CCE:' 5<' G8B8 D
5:7 @ ' 7@' <@B<@R' 5:885 $;7 ' :7 8 ' >:<F' > 667@A' :<CI Ø @B' '
; 66' 8@B8 ?<E:Ø 7@' 5;8' C<E: 8' <>' 5;7 ' ?<6EF8Ø 5<' F I8' 5;8' :8 B8:'
E@B8: 5 @B' 5; 5' 75' 7 ' ' ' B @A8:Ø @B' <@8' A 7@ 5' J ;7C;' I766Ø
5:8@A5;Ø @B' C<E: A8Ø :8' 8HE 669' E@ ? 767@A$ 5' <CCE: ' 5' E@8LD
G8C58B' 57F8 Ø @B' F 9' <CCE:' 7@' 6F< 5' @9' G6 C8$;8' C:757C' F 9'
:85<:5Ø Z' <E:' BF7 7<@' <>' 5;7 ' <@8' B @A8:' B8 5:<9 ' 66' 5;8' :8 5' <>'
5;8' :AEF8@5$3' ' A:88' J75;' ;7F' 5; 5' 75' J<E6B' B<' <' 7>' 75' J8:8' '
' ' :7 I' 5<' 67>8$ E5' 65;<EA;' 75' 7 ' ' :8 6' B @A8:Ø 75' 7 ' @<5' '?8:9'
8:7<E ' :7 IØ =6<5' F @9' C 8 ' C @' =8' HE<58B' <>' CC7B8@5 ' J7@C;'
; ?8' ; GG8@8B' 5;:<EA;' > 667@A' 5<@8 Ø @B' ' B<' @<5' I@<J' @' 7@D
5 @C8' <>' 67>8' ; ?7@A' =88@' 6< 5' 7@' 5;7 ' J 9' 7@' 5;8' 7A;' 6G $P' '
EGG< 8Ø ;<J8?8:Ø >8J' G8: <@ ' J766' F 7@5 7@' 5; 5' 75' 7 ' E@!E 57>7 =68'
5<' B<' @95;7@AØ >G:' G<:5' <:' <5;8:J7 8Ø <' 6<@AØ ' ' :7 I' 7 '
7@CE::8BØ 86 8' 75' J<E6B' =8' E@!E 57>7 =68' 5<' C:< ' 46885' 5:885' 5'
F7B B 9$ >' 75' J8:8' <@8R' =<E@B8@' BE59' 5<' ?<7B' 8?8:9' :7 IØ J8'
;<5BB';?8'5<'G '<E:'67?8 '7@B<<:$ 'C<@C87?8'5;5'5;8'G68 E:8 '
<>' F<E@5 7@88:7@A' <E5J87A;' 5;8' :7 I ' :7 7@A' >:<F' 5;7 'G :57CE6 :'
C E 8Ø @B' 5; 5' 5;8' G: C57C8' J766' @<5' =8' ?85<8B' <@' 75 ' CC<E@5$
1"J!' 'J7 ;'5<' 5 FG'75' ' ' 'B @A8:Ø @B' '<@8' J ;7C;' F 9'
7F G8:76'5;8';>8'<>'5;8'F<5'G8:>8C5' F<E@5 7@88:$
;8:8'7Ø 5;8@Ø <@69'<@8'G< 757?8' B @A8:'7@' F<E@5 7@88:7@AØ @B'
5; 5' 7 '675568':7 I$;8:8' :8Ø ;<J8?8:Ø @EF8:<E ' @8A 57?8' B @A8: '
5;:<EA;' J ;7C;' F @9' 6< 8' 5;87:' ;?8 $;8' J<:B ' G< 757?8' @B'
@8A 57?8' :8' E 8B' 7@' 5;8' ><66<J7@A' 8@ 8$ 'G< 757?8' B @A8:' 7 ' <@8'
J ;7C;' J8' :8' G<J8:68 '5<' ?<7BØ @B' '@8A 57?8' B @A8:' 7 ' <@8' J ;7C;

P' ;8' 8<@5: :!'7 '5;8' C 8' 7@' :8A :B' 5<' 5;8' <J8:' 6G $ F<@A 5'<5;8: Ø5;8' 8 8'
F 9'=8' F8@57<@8B' <>' ' 6 B9' J ;<' M@<5' ?8:9'6<@A' A<M' ; B' ;8:' IE66' >: C5E:8B' J ;768'
7557@A' 5' 5;8' = 8' <>' 5;8' 8:' B8' &6 C8$

:8HE7:8 ' C57<@' <@' <E:' G :5' 5<' C<@?8:5' 75' 7@5<' 'G< 757?8' <@8$ 'G:8D C7G7C8' 7 ' '@8A 57?8' B @A8:0 =E5' 75' 7 ' 'G< 757?8' <@8' 5<' 'F @' J ;<' > 66 ' <?8:' 7 5 [' 588G' @<J 6<G8' <>' @8J @<J' ; 'B @A8:<E 'HE 67578 0 =E5' 75' 7 ' @<5' G< 757?869' B @A8:<E ' E@576' 75 ' 8HE:67=:7EF' 7 ' B7 5E:=8B0 @B' 75' B8 C8@B ' ' @' ? 6 @C;8' [5;8' G/8B EG' =6<C I ' <@' ' ; 558:8B' :7BA8' F 9' =8' B @A8:<E 0 =E5' 5;89' :8' @<5' <$ E@576' 5;89' :8' B7 D 6<BA8B' [@B' ' C<@C8 68B' C:8? 8' F 9' =8' G8:76<E ' 5<' 5;8' 6 5' B8D A:880 =E5' 75' 7 ' @<5' <' E@68 ' 9<E' 5E F=68' 7@5<' 75$;7 ' B7 57@C57<@' 7 ' @<5' ; 7: G67557@A0 @B' 75' 7 ' 8 8@57 6' 5<' :8F8F=8:' 750 7>' <@8' J<E6B' C<F8' 5<' 'C68 :' E@B8: 5 @B7@A' =<E5' 5; 5' J;7C;' 7 ' :7A;5' @B' J:<@A' 7@' F<E@5 7@88:7@A$ >' 75' J8:8' 7F G< 7=68' 5<' ?<7B' 5E F=67@A' 7@5<' C:8? 8 0 <:' B7 6<BA7@A'? 5' F 8 ' <>' B8=:7 0 <:' 5 :57@A' ? 6 @C;8 0 <:' > 667@A' <?8:' G:8C7G7C8 0 F<E@5 7@88:7@A0 ><:' 5;8' I8' =>' G<:50 J<E6B' =8' 8@57:869' E@!E 57>7 =680 @B0 CC<:B7@A' 5<' 5;8' G:7@C7G68 ' 6:8 B9' 6 7B' B<J@0 75' 7 ' E@!E 57>7 =68' 7>0 5;:<EA;' 7@C<FG858@C8' <:' :8CI68 @8 0 @9' <@8' C<@?8:5 ' 5;8 8' @8A 57?8' 6EF=8:7@A' B @A8:' 7@5<' C57?8' @B' G< 757?8' <@8 $

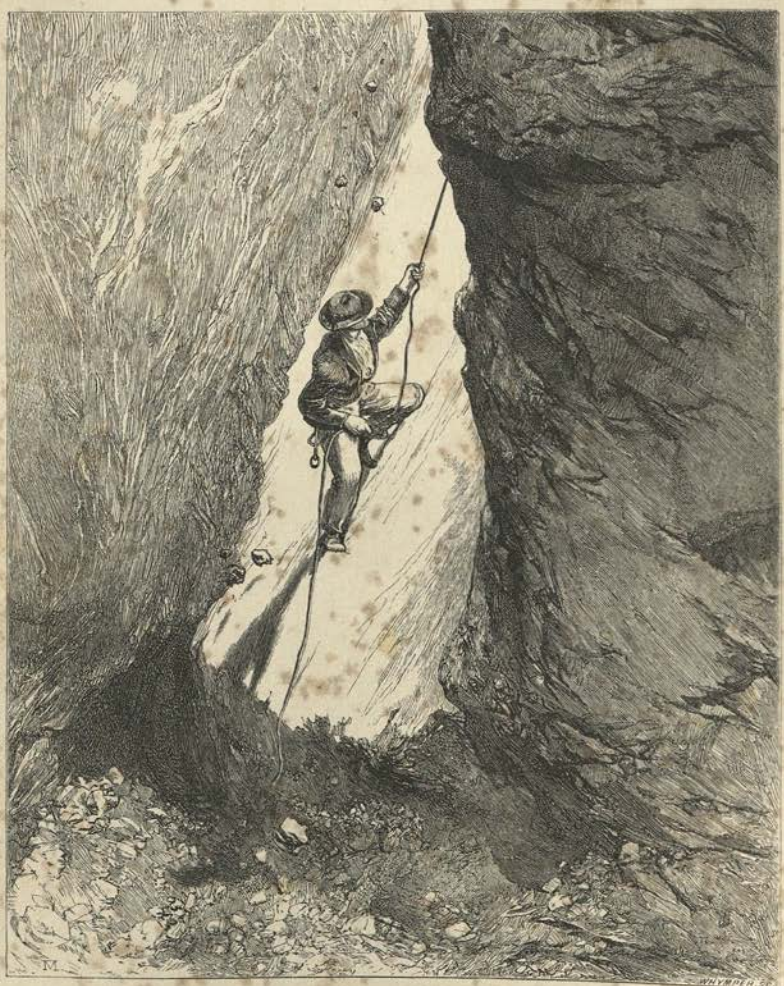
5' F 9' =8' :8F :I8B' G :8@5;857C 669' 5; 5' 5;8' 58:F' ><<6; :B7@8 ' 7 ' >:8HE8@569' E 8B' : 5;8:' 6<< 869' 7@' :8A :B' 5<' CC7B8@5 ' J;7C;' <CCE:' 7@' 5;8' 6G $;8' F8:8' > C5' 5; 5' ' F @' 6< 8 ' ;7 ' 67>80 <:' E D 5 7@ ' 7@!E:90 J;85;8:' 75' =8' <@' 5;8' F<7F5 7@ ' <:' 86 8J;8:80 7 ' @<' G:<<>' 5; 5' ;8' J ' ><< /7 :B9' 0 @B' EG<@' :8?78J7@A' 5;< 8' CC7B8@5 ' J;7C;' ; ?8' ; GG8@8B' 7@' 6 58' 98 : 0 75' 88F ' 5<' F8' 5; 5' 5<' 5;8' Y+ !<:' G :5' 5;8' J<:B' 7 ' 7@ GG67C =68$ >' @95;7@A' 7 ' E@B8:5 I8@' ><:' G<:5' J;7C;' 5;8:8' 7 ' A<<B' :8 <@' 5<' EGG< 8' FE 5' > 760 <:' J766 G:<= =69' =8' > 5 6' 5<' 67>80' 5; 5' F 9' =8' C<@ 7B8:8B' ><<6; :B9$ E5' 7>' 5;8' E@ ?<7B =68' :7 I ' :8' 6F< 5' 7@ GG:8C7 =680 @B' 5; 5' J;7C;' 7 ' E@B8:5 I8@' 7 ' @<5' C68 :69' =89<@B' 5;8' G<J8: ' <>' 5;< 8' J;<' E@B8:D 5 I8' 750 75' 88F ' 5<' F8' 5; 5' 5;8' E 8' <>' 5;7 ' J<:B' 7 ' @<5' B?7 =680 8?8@' 65;<EA;' ' > 5 6' CC7B8@5' ;<E6B' ; GG8@$ ' 67G' J;7C;' :7 8 ' >:<F' ' F<F8@5 :9' 7@B7 C:857<@0 <:' @' CC7B8@5' 5;8' C<@ 8HE8@C8' <>' 8L; E 57<@0 ;<E6B' ; :B69' =8' C6 8B' F<@A 5' 5;< 8' > 5 ;578 ' J;7C;' :8' 5;8' B7:8C5' :8 E65 ' <>' 7F G:EB8@C8 ' 5; 5' :8' 8@57:869' E@!E 57>7 =680 @B' 75' C @@<5' =8' B8@78B' 5; 5' CC7B8@5 ' ; ?8' ; GG8@8B' ><:' J;7C;' @<' 8LCE 8 ' C @' =8' <>>8:8B$

;:88$ G< 7=68$ C E 8 ' <' CC7B8@5 ' ; ?8$ @<J' =88@' F8@57<@8B$ 4:<F' 5;8$>7: 5' 5;8:8$7 ' F 66$:7 I0 5E5' E@ ?<7B =68$B @A8:' <' 6<@A' ' F<E@5 7@88:7@A'7 'G: C57 8B0 >:<F' 5;8$<5;8: ' 5;8:8$F 9'=8$A:8 5' :7 I 0'=E5' 5;89' :8$8 769' ?<7B8B'=9'5;8$8L8:C7 8$<' '675568$C<F F<@' 8@ 8$;8$6 :A8 5' G :5' <' 5;8$ CC7B8@5 0' ;<J8?8:0' J;7C;' <CCE:' 7@'5;8$ 6G ' C @@<5' =8$C6 8B' E@B8:' 5;8 8$;8 B 0'=E5' :7 8$C;78>69' >:<F' F<F8@5 :9' 7@B7 C:857<@ 0' @B' >:<F' F8@' 5:97@A'5<' B<' 5; 5' J;7C;' 7 ' =89<@B' 5;87:' G<J8: $ 5' 7 ' @<5' 8 9' 5<' >7@B' 5J<' C 8 ' 8L C569' 67I80' 65;<EA;' 5;89' G:7@C7G /9' C<F8$>:<F' 5;8$B7>>7CE659' F @' 8LG8:78@C8 ' 7@' I88G7@A' <@' ;7 ' >885' 7@' 67GG8:9'G6 C8 $;89' C<F8$@<5' >:<F' @9'B @A8: ' 7@;8:8@5' 5<' F<E@5 7@ 0'=E5' >:<F' 5;8$>: 76578 ' <' 5;8$F<E@5 7@88:$ ' ?<6EF8$F7A;5' =8$>7668B' J75;' 8L FG68 0' @B' 5;89' J<E6B' 66$=8$><E@B' 5<' ;<J' 5; 5' 7>' $ ' ; B' =88@' B<@80' <:' $ ' ; B' @<5' =88@' B<@80' 5;8$:8 E65 ' J<E6B'@<5' ; ?8$; GG8@8B$ @' F @9'C 8 ' <F8$C @<@' <' F<E@5 7@88:7@A' J766' =8$><E@B' 5<' ; ?8$=88@' ?7<6 58B0' @B' 7@' 660' 5;8$F @' : 5;8:' 5; @' 5;8$F<E@5 7@' J766' =8$><E@B' 5<' ; ?8$=88@' 5;8$<>8@B8:$

' ; ?8$@<J' 8@B8 ?<E:8B' 5<' B7 C:7F7@ 58$=85J88@' 5; 5' J;7C;' 7 ' F8:869' B7>>7CE65' @B' 5; 5' J;7C;' 7 ' = <6E5869' B @A8:<E 0 8C<@B690' 5<' B7 57@AE7 ;' E@ ?<7B =68$>:<F' ?<7B =68$B @A8: 0 @B' 5;7:B690' 5<' F I8$':<EA;'C6 7>7C 57<@'<'5;8$C E 8 '<' CC7B8@5 $ >'5; 5' J;7C;' ; '=88@' 7B'7 '5:E80'75'><66<J ' 5; 5'5;8$B @A8: '>:<F'5;8$ 6G '5;8FD 86?8 ' ; ?8$=88@' :7B7CE6<E 69'<?8:: 58B0' @B' 5; 5' 5;8$5767@A' 5<'=8$"J7 ;8B'><:' 7 0' @<5' 5; 5' 5;8$F<E@5 7@' ;<E6B'=8C<F8$8 78:0'=E5' 5; 5'F8@' ;<E6B'=8C<F8$J7 8:' @B' 5:<@A8:$ 5' 7 ' 5<<' FEC;' 5<' 8LG8C50' ;<J8?8:0' <' 6<@A' '59:<' 558FG5'5<'7F75 58$5;8$B<7@A ' <' /8B'F<E@5 7@88: 0' @B' F7BB68 A8B'A8@568F8@0' J75;' 57>' I@88 0' 8 9'5;8$5;7@A ' J;7C;' :8$B G58B'<@69'5<'5;8$9<E@A' @B' C57?80' 5; 5' CC7B8@5 ' 7@' 5;8$ 6G ' J766' C8 80' <:' 8?8@'B7F7@7 ;'7@'@EF=8:0' @B0' 65;<EA;' 5;8 8$5<<' B :7@A' G8: <@ ' ;<E6B0'G8:; G 0'=8$G7578B' : 5;8:'5; @' C8@ E:8B0'75'7 ' ?8:9'FEC;' 5<'=8$B8 7:8B'5; 5'5;89'J<E6B' G 9' ' ;5568$F<:8$ 558@57<@' 5<'5;8$5:E5;'Z ; 5' J;7C;' 7 ' G<:5'5<' <@8$F 9'=8$B8 5;' 5<' @<5;8:03'7@ 58 B' <' GG697@A' 5<'5;8F 86?8 ' 5;8$F L7F'Z) ; 5' F @' ; ' B<@8$F @' C @'B<$3

' 6<@A' B7A:8 7<@' ; ' =88@' C E 8B' =9' @' 7@@<C8@5' AE669'
J ;7C ;' ' >8 :8B' 5 ;8' :8 B8:' F 7A ;5' 5 ;7@ I' J ' B @A8:<E $ 5' J ' @'
E@5:<BB8@' ?8 57=E68P' J ;7C ;' 68B' 5<' ' C8@8' <' J 76B' 5 ; 5' 8?8@' 5 ;8'
F< 5' <=8:' B8 C:7G57<@' <>' 75' F E 5' 88 F' @' 8L AA8: 57<@$;8:8' J '
' C ; @A8' 7@' 5 ;8' HE 6759' <>' 5 ;8' :<CI0' @B' 5 ;8:8' J ' ' C ; @A8' 7@' 5 ;8'
GG8 : @C8' <>' 5 ;8' :7BA8$] ;8' :<CI ' M5 6C< 8' A@87 N' =86< J' 5 ;7 ' G<5'
J8:8' 7@AE6 :69' >7: F 0 75' J ' : :869' @8C8 :9' 5<' 58 5' <@8R' ; <6B0
5 ;8' J 9' 68B' <?8:' 5 ;8' 67?7@A' :<CI0' @B' @<5' EG' :8@5 <>»' >: AF8@5 $
E5' ;8:80' 66' J ' B8C 9' @B' :E7@$;8' C:8 5' <>' 5 ;8' :7BA8' J '
; 558:8B' @B' C68>50' @B' 5 ;8' >885' @I' 7@' 5 ;8' C ;7G ' J ;7C ;' ; B' B:7>58B'
B<J@' 0) ;768' =<?80 ;EA8' =6<CI 0' ; CI8B' @B' C :?8B' =9' 5 ;8' ; @B' <>'
57F 80' @<BB8B' 5<' 5 ;8' I90' 6<< I7@A' 67I8' 5 ;8' A: ?8 5<@8 ' <>' A7 @5 $
E5' <>' CE:7< 759' ' J @B8:8B' 5<' ' @<5C ;' 7@' 5 ;8' :7BA80' =85J88@' 5J<'
5<558:7@A' G768 ' <>' 7F F8@ 8' F 8 0' J ;7C ;' 88F8B' 5<' @88B' ;E5' ' >8J'
G<E@B ' <@' <@8' <:' 5 ;8' <5 ;8:' 7B8' 5<' F I8' 5 ;8F ' > 660 <' @7C869' G<7 8B'
5 ; 5' 5 ;89' J<E6B' 6758: 669' ; ?8' :<<I8B' 7@' 5 ;8' J7@B0' ><:' 5 ;89' J8:8'
GE5' 7@' F<57<@' =9' ' 5<EC ;0 @B' = 8B' <@' EGG<:5' <' >: 76' 5 ; 5' '
J<@B8:8B' 5 ;89' B7B' @<5' C<66 G 8' =8><:8' F 9' 898 $ @' 5 ;8' J ;<68'
: @A8' <>' F 9' 6G7@8' 8LG8:78@C8' ' ; ?8' 88@' @<5 ;7@A' F<:8' 5:7I7@A'
5 ; @' 5 ;7 ' B8 <6 580' :E7@8B0' @B' ; 558:8B' :7BA8' 5' 5 ;8' = CI' <>' 5 ;8'
&:8 5' <J8:$ ' ; ?8' 88@' 5: @A8:' ; G8 0K :<CI ' J ;7C ;' F7F7C' 5 ;8'
;EF @' ><: F0' J75 ;' F<@ 5:<E ' 688:7@A' > C8 K @B' 7 <6 58B' G7@@ C68 0'
; :G8:' @B' A:8 58:' 5 ; @' @9' ;8:80 =E5' ' ; ?8' @8?8:' 88@' 8L ;7=758B'
<'7F G:8 7?869' 5 ;8' 5:8F 8@B<E ' 8>>8C5 ' J ;7C ;' F 9' =8' G:<BEC8B' =9'
>:< 50' @B' =9' 5 ;8' 6<@A C<@57@E8B' C57<@' <>' ><:C8 ' J ;< 8' 7@B7?7BE 6'
8>>8C5 ' :8' 7F G8:C8G57=68$

5' 7 ' @88B68 ' 5<' 9' 5 ; 5' 75' 7 ' 7F G< 7=68' 5<' C67F =' =9' 5 ;8' C:8 5'
<>' 5 ;8' :7BA8' 5' 5 ;7 ' G :50 5766' <@8' 7 ' C<F G8668B' 5<' I88G' @8 :' 5<' 750'
><:' 5 ;8:8' 7 ' @<' <5 ;8:' J 9$ &8@8: 669' G8 I7@A0' 5 ;8' @A68 ' <@' 5 ;8'
558: ;<:@' :8' 5<' 588G' 5<' 66<J' 5 ;8' ><: F 57<@' <>' C<@ 7B8: =68'
=8B ' <>' @<J0' =E5' ;8:8' 5 ;8:8' 7 ' ' C<:@8:' J ;7C ;' G8: F 75 ' 75' 5<' CCE F ED
6 580' @B' 75' 7 ' 5E:@8B' 5<' A: 58>E669' ><:0' =9' 75 ' 7 5 @C80' <@8' C @'
C8@B' ><E:' 57F 8 ' ' : G7B69' ' EG<@' 5 ;8' :<CI $
;8' <J8:' J ' @<J' 6F< 5' <E5' <>' 7A ;50' @B' ' 6<< I8B' <?8:



"THE CHIMNEY."

(ON THE SOUTH-WEST RIDGE OF THE MATTERHORN).

5;8C8@5: 6 8@@7@8 6G '5<5;8 &: @B <F=7@ @B5<5;8C; 7@<>
<@5 6 @C$ 9 @87A;=<E:5;8 '8@5 BR 8:8@ 5766 :<8 =<?8
F8 65;<EA;'=E5 67A;5690 @B5;8 ;87A;5 J;7C;'; B=88@ 55 7@8B
C<E6B=8 F8 E:8B"=9 75 ';86G$ <> :' ; B@< B<E=5 '=<E5 F 9
C G C759 5< B8 C8@B5; 5 J;7C;'; B=88@ C8@B8B =E5 7@ ';<:5
57F8 <@ 6<<I7@A ;8 B ' J'5; 5 5;8 C67>> ' 588G8@8B @B '5E:@8B
; CI' MJ75;<E5 GE ;7@A <@ 5< 5;8F @B A8557@A 7@5< 7@8L5:7C =68
B7>>7CE6578 N 8LE657@A 7@ 5;8 5;<EA;5 5; 5 5;89 J< B =8 G 8B
J;8@ J8 :85E:@8B 5<A85;8: @B 5; 5 '; B J75;<E5 7 5 @C8 A<5
@8 :69 5<5;8 ;87A;5 <>5;8 '8@5 BR 8:8@ @B C<@ 7B8: =69 ;7A;8:
5; @ @9 <@8 ; B =88@ =8><:8$P 9 8LE65 57<@ J ' 675568 G:8D
F 5E:8$]
$
" =<E5 ' $ $ '68>5 5;8 58@5 A 7@ @B 5;<@A;5 F9 86> 'A<<B
' 5 :876$;8 >:78@B69 :<G8 @B C6 J'; B B<@8 A<<B 8:?7C8 @B
; B F<<5;8@8B 66 5;8 B7>>7CE6578 $ ' 6<J8:8B F9 8U 5;:<EA;'5;8
;7F@89 ;<J8?8: =9 F I7@A '>7L5E:8 <>5;8 :<G8 J;7C;' '5;8@
CE5 <> @B 68>5 =8;7@B '5;8:8 J '8@<EA;' @B 5< G :8$ 9 L8
; B G:<?8B 'A:8 5 @E7 @C8 7@ C<F7@A B<J@ @B '68>5 75 7@ 5;8
58@5$ 5 J ' @<5 55 C;8B 5<5;8 = 5<@ =E5 J ' ' 8G : 58 * >7 7:
0 @ <6B @ ?9 =< :B7@A L8$);768 CE557@A EG 5;8 B7>>8:8@5 @<J '
=8B '<@5;8 C8@5 5;8 = 5<@ 5: 768B =8;7@B > 58@8B 5< 5;8 :<G8
@B J;8@ C67F=7@A 5;8 L8 J ' C ::78B =8;7@B :E@ 5;:<EA;'5;8
:<G8 578B :<E@B F9 J 7 5 @B J ' E>>7C78@569 <E5 <>5;8 J 9 =E5
7@ B8 C8@B7@A J;8@ C<F7@A B<J@ > C8 <E5J :B ' M '7 6J 9 '=8 5
J;8:8 75 7 'G< 7=68N 5;8 ;8 B <:5;8 ; @B68 <>5;8 J8 G<@ C EA;5
>:8HE8@569 A 7@ 5 5;8 :<CI @B 8?8: 6 57F8 '@8 :69 EG 85 F8$
<E5 <>6 S7@8 '7>9<E J7/75 J '68>5 7@5;8 58@5$ 'G 7B B8 :69
><:5;8 7FG:EB8@C8$
;8 <6 BE 7<@ J 'G 8B @B >7>59 9 :B 'F<:8 J<E6B ; ?8
G6 C8B F8 <@5;8 Z &:8 5 5 7:C 803 B<J@ J;7C;'<@8 C @:E@$ E5

P '8F :I =68 5:8 I'<> @<)'MF :I8B Z'C: ? 58 3 7@5;8 <E567@8 <>5;8 558:D
;<:@ '88@ >:<F'5;8 ;8<B7668N :E@ ' C:< '5;8 C67>> 55;7 'G :5 <>5;8 F<E@5 7@$
9;7A;8 5 G<7@5 J ' <F8J; 5 ;7A;8:5; @5;8 6<J8 5 G :5 <>5;7 ' @<J @B J '
C<@ 8HE8@569 @8 :69 0 '>885 =<?8 5;8 8 $

<@' ::7?7@A' 5' @' @A68' <>' 5;8' C67>>' <>' 5;8' 58' BE' 7<@0' J;768' I7:57@A' 5;8' EGG8:' 8BA8' <>' 5;8' @<J' J;7C;' ;E5' A ;7 5' 5;8F0' '><E@B' 5; 5' 5;8' ;8 5' <>' 5;8' 5J<' G 5' B 9' ; B' @8 :69' <=6758: 58B' 5;8' 58G' J;7C;' ; B' =88@' CE5' J;8@' C<F7@A' EG$' ;8' :<CI' ; GG8@8B' 5<' =8' 7FG: C57C =68' !E 5' 5' 5;7' C<F8:0' <' @<5;7@A' C<E6B' =8' B<@8' 8LC8G5' F I8' 5;8' 58G' >:8 ;$;8' @<J' J '5<<' ; :B' 5<' =8 5' <:' 5:8 B' B<J@0' @B' 5' 5;8' @A68' 75' J ' 66' =E5' 7C80' ; 6> B<S8@' 58G' <@69' J8:8' :8HE7:8B0' @B' 5;8@' 5;8' 68BA8' C<E6B' =8' ><66<J8B' A 7@$ <' ' ;86B' 5<' 5;8' :<CI' J75;' F9' :7A;5' ; @B0' @B' G:<BB8B' 5' 5;8' @<J' J75;' 5;8' G<7@5' <>' F9' 57CI' E@576' ' A<<B' 58G' J ' F B80' @B' 5;8@0' 68 @7@A' :<E@B' 5;8' @A680' B7B' 5;8' F8' ><:' 5;8' <5;8:' 7B8$ 8' > :' J866' =E5' 7@' 558FG57@A' 5<' G ' 5;8' C<:@8:' M5<' 5;8' G:8 8@5' F<F8@5' 'C @@<5' 5866' ;<J' 75' ; GG8@8BM' ' 67GG8B' @B' >866

;8' 6<G8' J ' 588G' <@' J;7C;' 5;7' 5<<I' G6 C80' @B' J ' 5' 5;8' 5<G' <>' 'AE669' 5; 5' 68B' B<J@' 5;:<EA;' 5J<' E=<:B7@ 58' =E55:8 8' 5<J :B' 5;8' &6 C78:' BE' 7<@K J;7C;' J 'IE 5' 88@0' ' 5;<E @B' >885' =86<J$;8' AE/9' @ ::<J8B' @B' @ ::<J8B0' E@576' 5;8:8' J ' ' F8:8' 5;:8 B' <>' @<J' 697@A' =85J88@' 5J<' J 66' <>' :<CI0' J;7C;' C F8' 5<' @' =:EG5' 58:F7@ 57<@' 5' 5;8' 5<G' <>' ' G:8C7G7C8' 5; 5' 7@58:?8@8B' =8D 5J88@' 75' @B' 5;8' A6 C78:$ F A7@8' '>E@@86' CE5' 7@' ; 6>' 5;:<EA;' 75' 68@A5;0' G6 C8B' 5' @' @A68' <>' 2' B8A:88 0' J75;' 75' G<7@5' =86<J' @B' 75' C<@C ?8' 7B8' EGG8:F< 50' @B' 9<E' J"766' ; ?8' '> 7:' 7B8' <>' 5;8' G6 C8$

;8' I@ G CI' =:<EA;5' F9' ;8 B' B<J@' >7: 50' @B' ' G75C;8B' 7@5<' <F8' :<CI' =<E5' 'B<S8@' >885' =86<J' 0' 5;89' C EA;5' <F85;7@A' @B' 5EF=68B' F8' <>' 5;8' 8BA80' ;8 B' <?8:' ;886' 0' 7@5<' 5;8' AE6690' 5;8' = 5<@' J ' B ;8B' >:<F' F9' ; @B' 0' @B' ' J;7:68B' B<J@J :B' 7@' ' 8:78' <>' =<E@B' 0' 8 C;' 6<@A8:' 5; @' 5;8' 6 5' 0' @<J' <?8:' 7C80' @<J' 7@5<' :<CI' 0' 5:7I7@A' F9' ;8 B' ><E:' <:' >7?8' 57F8' 0' 8 C;' 57F8' J75;' 7@D C:8 8B' ><:C8$;8' 6 5' =<E@B' 8@5' F8' GEF7@A' 5;:<EA;' 5;8' 7:0' 7@' ' 68 G' <>' >7>59' <:' 7L59' >885' >:<F' <@8' 7B8' <>' 5;8' AE669' 5<' 5;8' <5;8:0' @B' ' 5: CI' 5;8' :<CI' 0' 6ECI769' 0' J75;' 5;8' J;<68' <>' F9' 68>5' 7B8$;89' C EA;5' F9' C6<5;8' '><:' ' F<F8@50' @B' '>866' = CI' <@' 5<

"IN ATTEMPTING TO PASS THE CORNER I SLIPPED AND FELL."

5678' @<J' J75;' F<57<@' ::8 58B0' F9' ;8 B' ><:5E@ 5869' C F8' 5;8' :7A;5' 7B8'EG0' @B' '>8J'>: @57C'C 5C;8'=:<EA;5' F8'5<' '; 650' 7@'5;8' @8CI'<>'5;8' AE6690' @B'<@'5;8'?8:A8'<>'5;8' G:8C7G7C8$ 5<@0' ; 500' @B'?8760' I7F F8B'=9' @B'B7 GG8 :8B0' @B'5;8'C: ;'<>'5;8':<CI K' J;7C;' '; B' 5 :58BK '5;89'>866'<@'5<'5;8'A6 C78:0'5<6B';<J'@ ::<J' ; B' =88@'5;8' 8 C G8' >:<F' E558:' B8 5:EC57<@$ ' 75' J 0' '>866' @8 :69'Q '>885'7@' 8?8@'<:'87A;5'=<E@B $ 8@'>885' F<:8' J<E6B' ; ?8'5 I8@'F8'7@'<@8' A7A @57C'68 G'<>' '>885'<@'5<'5;8'A6 C78:' =86<J$

678' 75E 57<@'J ' 5766' E>>7C78@569' 8:7<E $;8' :<CI ' C<E6B' @<5' =8' 68>5' A<' ><:' ' F<F8@50' @B' 5;8' =6<<B' J ' G7:57@A' <E5' <>' F<:8'5; @'5J8@59'CE5 $;8' F< 5' 8:7<E ' <@8 ' J8:8' 7@'5;8' ;8 B0' @B' '? 7@69'5:78B'5<' C6< 8'5;8F' J75;'<@8'; @B0' J;768';<6B7@A' <@' J75;'5;8'<5;8:$ 5' J 'E 868 '0 5;8' =6<<B' !8:I8B'<E5 7@'=67@B7@A' !85' 5' 8 C;' GE6 57<@$ ' 6 50' 7@' ' F<F8@5' <>'7@ G7: 57<@0' ' I7CI8B'<E5' '=7A'6EFG'<>' @<J0' @B' 5ECI'75' ' 'G6 58:'<@' F9' ;8 B$;8' 7B8 ' J ' ' ; GG9' <@80' @B' 5;8' >6<J' <>' =6<<B' B7F7@7 ;8B'0 5;8@0' C: F=67@A'EG0' 'A<50' @<5' ' F<F8@5'5<<' <<@0'5<" ' G6 C8'<>' >8590' @B'> 7@58B' J 9$;8' E@' J ' 8557@A' J;8@' C<@ C7<E @8 ' :85E:@8B0' @B'75' J ' G75C;'B :I'=8><:8'5;8' &:8 5' 5 7:C 8' J ' B8 C8@B8B0' =E50'=9' ' C<F=7@ 57<@'<>'6EC I' @B' C :80' 5;8'J;<68'2 '>885'<>'B8 C8@5'5<' :876' J ' CC<FG67 ;8B'J75;<E5' ;G0"<:'<@C8' F7 7@A'5;8' J 9$ ' 6E@I'G 5'5;8' C =7@'<>'5;8' C<J;8:B 0' J;<' J8:8'5 6I7@A' @B'6 EA;7@A'7@ 7B80'E558:69' ; F8B' <>'5;8' 5 58'5<' J;7C;' ' ; B' =88@':<EA;5' ;9'F9'7F=8C76759'0' @B' 8@58:8B'5;8'7@@' 58 65;7690' J7 ;7@A'5<' 8 C G8'5<' F9':<<F'E@D @<57C8B$ E5' ?:8' F85'F8'7@'5;8'G A80' B8F @B8B'Z) ;<'7' 75'^3 C:8 F8B'J75;'>:7A;5' J;8@' ;8' A<5' '67A;50' @B' :<E 8B'5;8' ;<E 8;<6B$ J<'B<S8@';8 B'5;8@';86B' <68F@'C<E@C76'<?8:'F7@80' J75;'F<:8'5 6I'5; @' C57<@$;8'@ 57?8'J8:8'E@ @7F<E'7@' :8D C<F F8@B7@A'5; 5' ;<5'J7@8'M 9@$?7@8A :N0' F7L8B'J75;' 650' ;<E6B' =8':E==8B'7@5<'5;8'CE5 $ 'G:<58 58B0';E5'5;89'7@ 7 58B$ 5' J ' /'5;8'B<C5<:7@A'5;89':8C87?8B$);85;8:'5;87:': G7B' ;8 67@A'J ' 5<'=8' 55:7=E58B'5<'5; 5' 7FG68':8F8B90'<:'5<' 'A<<B' 5 58'<>';8 65;

is a question; they closed up remarkably quickly, and in a few days I was able to move again.*

It was sufficiently dull during this time. I was chiefly occupied in meditating on the vanity of human wishes, and in watching

AT BREIL (GIOMEIN).

my clothes being washed in the tub which was turned by the stream in the front of the house; and I vowed that if an Englishman should at any time fall sick in the Val Tournanche, he should not feel so solitary as I did at this dreary time.†

* I received much attention from a kind English lady who was staying in the inn.

† As it seldom happens that one survives such a fall, it may be interesting to record what my sensations were during its occurrence. I was perfectly conscious of what was happening, and felt each blow; but, like a patient under chloroform, experienced no pain. Each blow was, naturally, more severe than that which preceded it, and I distinctly remember thinking "Well, if the next is harder still, that will be the end!" Like persons who have been rescued from drowning, I remember that the recollection of a multitude of things rushed through my head, many of them trivialities or absurdities, which had been forgotten long before; and, more remarkable, this bounding through space did not feel disagreeable. But I think that in no very great distance more, consciousness as well as sensation would have been lost, and upon that I base my belief, improbable as it seems, that death by a fall from a great height is as painless an end as can be experienced.

The battering was very rough, yet no bones were broken. The most severe cuts were one of four inches long on the top of the head, and another of three inches on the

6 / ! * " * 4 4 4 4 <G

;8 @8J < 5;8 CC7B8@5 =:<EA;5 .8 @ @5<7@8 ::86 EG 5<
:8B @B 6<@A J75; 5;8 ; EA;59 C; 8E: C F8 <@8 < ;7
:86 57?8 5:<@A @B =68 9<E@A >866<J @ F8B 78 :) 75;
5;8 8 5J< F8@ @B 89@85 F B8 @<5;8: 5 :5 <@ 5;8 "Q B <
.E69$) 8 A<5 5< 5;8 58@5 J75;<E5 @9 5:<E=68 @B <@ 5;8 ><66<JD
7@A B 9; B C8@B8B =89<@B 5;8 <J8: @B J8:8 G7CI7@A <E: J 9
C E57<E 69 <?8: 5;8 6<< 8 :<CI =8;7@B MJ;8:8 F9 5: C8 < 5;8
J88I =8><:8 J8:8 J866 GG :8@5N 7@ 6<?869 J8 5;8: J;8@ <@8 <
5;< 8 =<F7@ =68 @B 6F< 5 7@ 5 @5 @8<E C; @A8 <CCE::8B 5<
J;7C: 5;8 558:;<:@ 7 < 67 =68 <@ 75 <E5;8:@ 7B8$ 7 5
J8:8 C:8 58B <E5 <7@?7 7=68 ? G<E: @B 7@ >8J F7@E58 @<J
>8B ;8 ?769$) 8 5<GG8B $5;7 G :5 J <8LC8 7?8 B7>>7CE659
@B E@J7667@A 5< :85:8 5 :8F 7@8B <@ 5;8 G<5 8?8: 6 ;<E: 7@
;<G8 5; 5 @<5;8: C; @A8 J<E6B <CCE:0 =E5 75 B7B @<5 J8 5
68@A5;J8@5 B<J@ 5< 5;8 = 8 < 5;8 <J8:0 @B C<F F8@C8B 5<
F I8 ;5;7:B G6 5><:F0 5 5;8 ;87A;5 < Q0 Q >885 =<?8 5;8 8 $
5 5766 C<@57@E8B 5< @<J0 @B J8 5<<I :8>EA8 7@ 5;8 58@5$ ::86
:AE8B 5; 5 5;8 J8 5;8: ; B =:<I8@0 EG0 @B 5; 5 5;8 F<E@5 7@
J<E6B =8C<F8 < A6 S8B J75;7C8 5<:8@B8: @9 558FG5 >E5768 0
@B 0 5; 5 5;8 C; @A8 J <@69 58FG<: :90 @B 5; 5 5;8 :<CI
J8:8"5<<;<5 5< 66<J7C8 5<><:F EG<@5;8F $ J7 ;8B 5< 5 9 E@576
5;8 J8 5;8:7FG:<?8B0 ;E5 F9 68 B8: J<E6B @<5 8@BE:8 C<@5: B7CD
57<@0 A:8J F<:8 G< 757?80 @B 7@ 7 58B 5; 5 J8 FE 5P A< B<J@$) 8
J8@5 B<J@0 @B J;8@ J8 A<5 =86<J 5;8 <6 ;7 <G7@7<@ J ><E@B
5< =8 J:<@A 0 5;8 C6<EB J C<@>7@8B 5< 5;8 EGG8: >8850 @B
<E5 7B8 75 5;8:8 J =:7667 @5 J8 5;8:$

:7A;5 58FG680 5;7 6 558: =68B >:7A;5>E669$;8:8 J ><:F7B =68 6<<I7@A CE50 <
=<E5 5;8 F8 7S8 5;8 6 50 <@ 5;8 G 6F < 5;8 68>5 ; @B0 @B 8?8:9 67F = J
A: S8B0 <: CE50 F<:8 <:68 87 7<E 69$;8 57G < 5;8 8 : J8:8 5 I8@ <>0 @B " ; :G
:<CI CE5 C7:CE6 : ;75 <E5 < 5;8 7B8 <>5;8 68>5 =<<50 <CI0 @B @I68 0 5 <@8 5:<I8$"
;8 6< < =6<<B0 65;<EA; <A:8 50 B7B @<5 $ 88F 5< =8 G8:F @8@569 7@!E:7<E $;8
<@69 8:7<E 8>>8C5 ; =88@ 5;8 :8BEC57<@ < @ 5E: 669 :858@57?8 F8F<:9 5< ?8:9
C<F F<@ G6 C8 <@8 0 @B 65;<EA; F9 :8C<668C57<@ < F<:8 B7 5 @5 <CCE::8@C8 :8D
F 7@E@ ; I8@0 5;8 8?8@5 <>5; 5 G :57CE6 : B 9 J<E6B =8 C88 @ A<@8 =E5><: 5;8 >8J
@<58 J ;7C; J8:8 J :7558@ B<J@ =8><:8 5;8 CC7B8@5$

<G= ! "(!' ! ' 4 ' (!

::8 J ' @<5 @ 8 9 F @ 5< F @ A8$ 8 J ' G8:>8C569 J :8 567 5 ;8 J ' 5;8 C<CI' <>' 5;8 (6 <E:@ @C;8 @B ;8 C<FD F @B8B5;8 <5;8:' F8@ '=9 :7A;5$ 8 J '8HE 669 C<@ C7<E ' 5; 5 ;8 J ' 7@B7 G8@ =68 5< F8 @B 5<<I'@< G 7@ '5< C<@C8 6 ;7 ' I@<JD 68BA8 <>' 5;8 > C5$ >' ;8 ; B =88@ C<F F @B8B <:' 7>' ;8 ; B =88@ 8@5:8 58B 5< 5<G 75 J<E6B ; ?8 =88@ 66 5;8 F8$ E5 685 F8 :8G8 5 ;8 J ' 5;8 <@69 >7: 5 : 58 C67F=8:' ' C<E6B >7@B J ;< =8678?8B 5; 5 5;8 F<E@5 7@ J ' @<5 7@ CC8 7=68$) 75;' ;7F' ' ; B ;<G8 =E5 J75;<E5 ;7F' @<@8 < ;8 J ' 66<J8B 5< B< ' ;8 J<E6B$ 7 ' J 766 <@ 5;7 ' <CC 7<@ J ' 6F< 5 7@C<FG:8;8@ 7=68$ 8 C8:5 7@69 C<E6B @<5 =8 C; :A8B J75;'C<J :B7C8 ><:' '=<6B8:' F @ C<E6B ; :B69 =8 ><E@B @<:' J ' ;8 5E:@7@A J 9 <@ CC<E@5 <>' B7>>7CE659 ><:' @<5;7@A 5< J ;7C;' J8 ; B 985 C<F8 88F8B 5< =8 B7>>7CE65 5< C @B ;7 ' 5:<@A G8: <@ 6 B8 7:8 5< F I8 5;8 C8@5 J ' 8?7B8@5$;8:8 J '@< <CC 7<@ 5< C<F8 B<J@ <@ CC<E@5 <>' ><<B ><:' J8 ; B 5 I8@ 5< AE :B A 7@ 5 5;7 ?8:9 C E 659 8@<EA;' 5< 6 5 ><:' ' J88I @B 5;8:8 J ' @< B @A8: @B 675568 <:' @< B7 C<F><:50 7@ 5<GG7@A 7@ 5;8 58@5$ 5 88F8B 5< F8 5; 5 ;8 J ' G7@@7@A <E5 5;8 C8@5 ><:' ;7 ' <J@ GE:G< 8 @B 5; 5 65;<EA;' ;8 J7 ;8B ?8:9 FEC;' 5< =8 5;8 >7: 5 @7 @ <@ 5;8 5<G @B B7B @<5 <=!8C5 5< =8 CD C<FG @78B =9 @9 <@8 86 8 J;< ; B 5;8 F8 J7 ;8 ; B @< 7@58@57<@ <> 68557@A <@8 ECC88B 5<< <<@0K+G8:; G ' 5< .7?8 ' A:8 58:' GG8 : @C8 <> ' J;8@ 5;8 5;7@A J ' CC<FG67 ;8B$ ' ;8 >8 :8B @< :7? 6 ;8 F 9 ; ?8 EGG< 8B 5; 5 5;8 F<:8 B7>>7CE6578 ' ;8 F B8 5;8 F<:8 ? 6E =68 ;8 J<E6B =8 8 57F 58B 5;<EA;5< B< ;7F' !E 57C8 ;8 @8?8:' ;<J8B @9 A:8 5 ;E@A8:' ><:' F<@89$ 7 ' B8F @B ' J8:8 > 7: @<5 8LC8 7?8 =E5 ;8 6J 9 ' 57GE6 58B ><:' < FEC;' G8:' B 9 @B <E@B8:' @9 C7:CEF 5 @C8 ;8 B7B @<5 B< = B69$ (8L8B 5 ; ?7@A F9 57F8 5;E ' >:7558:8B J 9 ' J ' 57B J866 G68 8B J;8@ ;8?<67F588:8B 5< 5 :5 A 7@ <@ 5;8 F<::<J 7>' 75 J ' >7@8$) 8 J8:8 5< B? @C8 5;8 58@5 5< 5;8 ><<5 <>' 5;8 <J8:0 5< >7L' :<G8 ' 7@ 5;8 F< 5 B7>>7CE65 G :5 ' =89<@B @B 5< F I8 ' GE ;' ><:' 5;8 EF F75 <@ 5;8 ><66<J7@A B 9$

;8 @8L5 F<:@7@A M4:7B 9 5;8 Q 5;N J;8@ ' :< 8 A<<B 675568

89@85' J ' :8 B9' @B' J 757@A0 @B' ;8' 7B' 5; 5' 5;8' 5J<' ::86 ' ; B' A<@8' <>' <F8' 57F8' =8><:80 @B' ; B' 68>5' J<:B' 5; 5' 5;89'7@58@B8B' F :F<5 ;E@57@A0 ' 5;8' B 9' J ' > ?<E: =68' ><:' 5; 5' G<:5$P' 9' ;<;B 9' ; B' @8 :69' 8LG7:8B0 @B' 5;8 8' @78@' C68 :69' C<E6B' @<5' =8' :8;8B' EG<@' 0 <0 ' ' 6 5' :8 <:50 ' G:<G< 8B' 5<' 5;8' ;E@C;= CI' 5<' CC<FG @9' F8' 6<@80 5<' 88' 7>' J8' C<E6B' @<5' A85' ;7A;8:' 5; @' =8><:80 5;<EA;' <>' :8 C;7@A' 5;8' EF F75' 5;8:8' J ' 675568' <:' @<' ;<G8$ 8' B7B' @<5' ;8 75 580 @B' 7@' ' >8J' ;<E: ' J8' 5<<BK><:' 5;8'5;7:B' 57F8' 5<A85;8: K EG<@'5;8' <6 BE' 7<@' 0 =E5'75' J ' 5;8' >7: 5'57F8' 89@85' ; B' 88@' 5;8' ?78J' E@C6<EB8B$;8' G<<:' ;5568' B8><: F8B' G8 @5' A S8B' EG<@' 75' 768@569' @B' :8?8:8@569' ><:' ' 57F80 @B' 5;8@0 E@D C<@ C7<E 690 >866 <@' <@8' I@888 7@' @' 5575EB8' <>' B<: 57<@0 @B' C6 G8B';7 '; @B 0 8LC6 7F7@A'7@'8C 5 90 Z' ;0=8 E57>E6 F<E@5 7@ 3 7 ' C57<@ ' J8:8' ' GG:<G:7 58' ' ;7 ' J<:B ' J8:8' @ 5E: 60 @B' 58 : ' =<:8' J75@8 ' 5<' 5;8' :8 6759' <>';7 ' 8F<57<@$

E:' G<J8:' J ' 5<<' 67F758B' 5<' B? @C8' 5;8' 58@50 <' J8' 68G5' 5 5;8+' <6B' 5 57<@0 @B' 5 :57@A' ?8:9' 8 :69' 5;8' @8L5' F<:@7@A0 G 8B' 5;8' G6 C8' J;8:8' J8' ; B' 5E:@8B' = CI' <@' 5;8' Q25;0 @B0 E= 8D HE8@5690 F9' ;7A;8 5' G<7@5' <@' 5;8' 5;$) 8' ><E@B' 5;8' C:8 5' <>' 5;8' :7BA8' <' 5:8 C;8:<E ' 5; 5' J8' 5<<I' 5<' 5;8' C67>> ' <@' 5;8' :7A;50 65;<EA;' F< 5' E@J7667@A69$ 75568' =9' 675568' J8' ><EA;5' <E:' J 9' EG0 =E5' 5' 68@A5;') ' J8:8' =<5;' G:8 B 8 A68B' <@' 5;8' /' =E5' G8:G8@B7CE6 :' > C80 E@ =68' 5<' B? @C80 @B' = :869' =68' 5<' B8 C8@B$) 8' :85E:@8B' 5<' 5;8' :7BA8$ 5' J ' 6F< 5' 8HE 669' B7>>7CE650 @B' 7@>7@75869' F<:8' E@ 5 =68' 0 @B' 5' 68@A5;0 >58:' ; ?7@A' GE ;8B' <E:' 558FG5 ' ' > :' ' J ' G:EB8@50 ' B858:F7@8B' 5<' :85E:@' 5<' :876 @B' 5<' ; ?8' ' ;A;5' 6 BB8:' F B8' 5<' 7 5' E ' 5<' <?8:C<F8' <F8' <>' 5;8' 588G8 5' G :5 $ >' ' 8LG8C58B0 5<<0 5; 5' =9' 5;7 ' 57F8' ::86 J<E6B' ; ?8' ; B' 8@<EA;' F :F<5 ;E@57@A0 @B' J<E6B' B87A@' 5<' CC<FG @9' E ' A 7@$

P' @' 7@C7B8@5' 67I8' 5;7 ' A<8 ' > :' 5<' F I8' <@8' 6<<I' > ?<E: =69' EG<@' 5;8' ' * ' <>' ; F<E@7L' @B' <5;8:' G6 C8 $;7 ' C<E6B' @<5' ; ?8' <CCE::8B' 5' ; F<E@7L0 @<:' ;8:80 7>' 5;8:8' ; B' =88@' ') 2' ''2

5' ;7 ' GG8 :8B' 5<' ;8' 5;8' F< 5' B7>>7CE65' G :5' <>' 5;8' F<E@5 7@$ @8' J 'B:7?8@' 5<' I88G' 5<' 5;8' 8BA8' <>' 5;8' :7BA80 <:' ?8:9'@8 :' 5<' 75 0 @B' 5' 5;8' G<7@5' J;8:8' J8' 5E:@8B' ; CI' MJ;7C;' J ' 6F< 5' ';7A;' ' 5;8' $ '$ ' G :5' <>' 5;8' Z' C: ? 580'3 >7@B' G8:; G

Y+(8 C F8' B<J@' 5' A:8 5' G C80' ><:')8$ J8:8' @<J' <' > F767 :' J75;'5;8' F<E@5 7@0' @B' J75;'8 C;'<5;8:R' J @5 0'5; 5' J8' I@8J'7@70' F8B7 5869' J;8@' 5<' A7?8' ' ;86G7@A' ; @B0' @B' J;8@' 5 ' 685' 6<@8$3 ;8':<CI ' 6 <' J8:8'7@' '=8558:' 5 58' 5; @' '; ?8' 8?8:' 88G' 5;8F0'0 =87@A' 6F< 5'8@57:869':>:88' >:<F' A6 S8" <>' 7C8$ 89@85'$J ' 6J 9' F8::78 5' <@'5;8'B7>>7CE65' G :5 0' @B0' <@'5;8' F< 5' B7>>78E650' I8G5' <@ 8@E@C7 57@A'5=8' 8@57F8@50' Z') 8'C @'<@69'B78'<@C803' J;7C;'5;<EA;5 88F8B'5<' >><:B' ;7F'7@>7@758' 57 > C57<@$) 8' ::7?8B" 5'5;8'7@@ 8 :69'7@'5;8' 8?8@7@A0' @B' '><E@B' F9'G:<!8C5' EFF :769' @B' E@D 8LG8C58B69' I@<CI8B'<@'5;8' ;8 B$ "R

:<>8 <:' 9@B 66' ; B' ::7?8B' J;768' J8' J8:8' = 8@50' @B';8'; B' 8@A A8B'=<5;' 8 :' @B' .8 @ @5<7@8' ::86$ 8@@8@' J ' 6 <' J75;';7F0'5<A85;8:' J75;' ' G<J8:>E6' @B' C57?8' >:78@B0' '(6 7 @' AE7B80' @ F8B' @5<@') 658:$;89' ; B' '6 BB8:' 6:8 B9' G:8D G :8B0' G:<?7 7<@' J8:8' =87@A' C<668C58B0' @B' 5;89'7@58@B8B'5<' 5 :5 <@'5;8' ><66<J7@A' F<:@7@A' M E@B 9N$;7' @8J' ::7? 6'5<<I' F8' =9' E:G:7 8$ 8@@8@0'75' J766' =8' :8F8F=8:8B0' :8>E 8B' G<F5=6 @I' 5<' 5 I8' :<>8 <:' !FB 66' <@'5;8' 558:;<:@'7@' $ Y 8' J ' B8 B' A 7@ 5' @9' 558FG5' <@'5;8' F<E@5 7@03' 9' 9@B 66$ 8' J ' @<J'8 A8:'5<' 85' <E5$:<>8 <:' 9@B 66' ; ' @<5' 8LG6 7@8B' 7@' J; 5' J 9' 5;7' :8?<6E57<@' C F8' =<E5' 7@' ;7 ' AE7B80' ' J ' 8HE 669' 5<@7 ;8B' 5'5;8'> 75;68 @8 ' <>' ::860' @B' 55:7=E58B' 75' 5<' G7HE8' 5' <E:' ; ?7@A' G:8 EF8B' 5<' B<' J75;<E5' ;7F$ 5' J ' E 868 ' 5<' C<FG858' J75;'5;8' :<>8 <:' @B' ;7' ><E:' F8@0' J;<' J8:8'58 B9'5<' 5 :5 7@' '>8J';<E: 0' <' ' J 758B'5<' 88' J; 5' J<E6B' C<F8'<>'5;87:' 558FG5$

?8:95;7@A' 88F8B'5<' > ?<E:' 750' @B' 5;89' 85' <E5' <@' '>7@8' F<:@7@A'7@' ;7A;' G7:75 0'68 ?7@A' F8' 5<:F8@58B'J75;' 8@?9' @B' 66' E@C; :75 =68@8 $ >'5;89' ECC88B8B0'5;89'C ::78B'<>'5;8'G:7S8'><:' J;7C;'' ; B'=88@' <'6<@A' 5:EAA67@A0' @B'7>'5;89'> 768B0'5;8:8' J

' >885' ;7A;8:'5; @'G79' C: F=68'<@'5;8' 5;N'5;8:8' J8:8' F<<5;'J 66' 8?8@'<:' 87A;5'>885' ;7A;'7@'8?8:9'B7:8C57<@0' J;7C;'J8:8'7FG =68'5<' ' 7@A68' F @0' @B' J;7C;' C<E6B'<@69'=8'$ E:F<E@58B'=9'5;8' 7 5 @C8'<>'6 BB8:0'<:'=9'E 7@A'<@8R' <F: B8' ' 6 BB8:$

A CANNONADE ON THE MATTERHORN. (1862)

@<' 57F8' 5<' F I8' @<5;8:' 558FG50' ><:'$ ' J ' BE8' 7@' '>8J'B 9 '!@<:8' 7@' <@B<@$) ;8@' 5;7 ' C F8' ;<F8' C68 :69' 5<' F80' ' :8 <6?8B' 5<' 68 ?8' 5877' 5' <@C80' =E50' J;8G' G CI7@A' EG0' ><E@B' 5; 5' <F8' @8C8 D :78 ' ; B' =88@' 68>5' =8;7@B' 7@' 5;8' 58@5$ <' ' J8@5' <>' =<E5' F7BD B 9' 5<' :8C<?8:' 5;8F' 0 C EA;5' 5;8' :F9' <>' 5;8' :<>8 <:0' =8><:8' 75' :8 C;8B' 5;8' <60' A' 5;89' J8:8' A<7@A' ?8:9' 6<J690 68>5' 5;8F' 5;8:8' M 5<GG7@A' 5<' 5 I8' ><<BN0' @B' J8@5' <@' 5<' 5;8' 58@5$ $ ' J ' @8 :' 5<' 75' J;8@' 66' 5' <@C8' ';8 :B' '@<7 8' 6<>50' @B0' <@' 6<<I7@A' EG0' G8:C87?8B' ' 5<@8' <>' 5' 68 5' '><<5' CE=8' >697@A' 5: 7A;5' 5' F9';8 B$ ' BECI8B0' @B' C: F=68B' E@B8:';5;8' 688' 7B8' <>' '>:78@B69' :<CI0' J;768' 5;8' 5<@8' J8@5' =9' J75;' '6<EB' =ESS$ 5' J ' 5;8' B? @C8B' AE :B' <>' 'G8:>8C5' 5<:F' <>' 5<@8 0' J;7C;' B8 C8@B8B' J75;'7@>8:@ 6'C6 558:;<J@' 5;8'?8:9' 8BA8' <>' 5;8' :7BA80' 68 ?7@A' '5: 76' <>' BE 5'=8;7@B0' J75;' ' 5:<@A' F866' <>' E6G;E:0' 5; 5$5<6B' J;<' ; B0 8@5' 5;87F:0' ;8' F8@'=86 J' J8:8' <@' 5;8' 6<<; <E50' =E5' 5;8' 5<@8 'B7B' @<5' C<F8' @8 :' 5;8F0' @B' =:8 ID 7@A' J 9' <@' <@8' 7B8' J8@5' B<(;' 5<' 5;8' A6 C78:$P ' J 758B'" 5' 5;8' 58@5' 5<' J86C<F8' 5;8' :<>8 <:0' @B' J;8@' ;8' ::7?8B' J8@5' B<J@' 5<' :876$:69' @8L5' F<:@7@A' <F8' <@8' : @' 5<' F8' !BEA' 5; 5' ' >6 A' J ' 88@' <@' 5;8' EF F75' <>' 5;8' 558:;<:@$ 5' J ' @<5' <0' ;<J8?8:0' 65;<EA;' ' J' 5; 5' 5;89' ; B' G 8B' 5;8' G6 C8' J;8:8' J8' ; B' 5E:@8B' = CI' <@' 5;8' Q 5;$' ; B' @<J' @<' B<E=5' <>' 5;87:' >7@ 6' ECC8 0' ><:' 5;89' ; B' A<5' =89<@B' 5;8' G<7@5' J;7C;' ::860' @<5' 68 '5; @' F9 86>0' ; B' 6J 9' C<@ 7B8:8B' 5<' =8' 5;8' F< 5' HE8 57<@ =68' G6 C8' <@' 5;8' J;<68' F<E@5 7@$ /G' 5<' 75' 5;8:8' J ' @<' C;<7C8' <>' 5<E580K ' EGG< 8' 5; 5' 5' @<' <@8' G<7@5' =85J88@' 750 @B' 5;8' <6 J ' 75' G< 7=68' 5<' B7?8:A8' 'B<S8@' G C8 ' 5<' 5;8' :7A;5' <:' 68>5$

P :<> ' ' 9@B 6N' B8 C:7=8 ' 5;7 ' 7@C7B8@5' 7@' 5;8' ><66<J7@A' J<:B ' 0K Z) 8' ; B' A 5;8:8B' EG' <E:' 5: 7 0' @B' =8@5' 5<' 5;8' J<:I' =8><:8' E 0' J;8@' EBB8@69' @' 8LG6< 7<@' <88E7 8B' <?8:;8 B$) 8' 6<<I8B' 6<>5' @B' J'7@' F7B 7:' ' <67B' ;<5'>:<F' 5;8' 5D 58:;<:@' B8 C:7=7@A' 75 'G:<G8:' G : =<6 0' @B$>7@ 669' G67557@A' 7@5<' >: AF8@5 ' '75' F<58' <@8' <>' 5;8' :<CI9' 5<J8:' '7@' >:<@5$ ' <J@' 5;8' ; 558:8B' >: AF8@5 'C F8'67I8' 'I7@B' <>' G: 90' 67A;569' J7B8' <>' E 0' ;E5' 5766' @8 :' 8@<EA;' 5<' C<FG86 ' ; :G6<<I <E5$ J<' <:' 5;:88' EC;' 8LG6< 7<@ ' <CCE7 8B0' ;E5' J8' C;<8' 5;8' ; CI' >7@' <>' 5;8' F<E@5 7@' ><:' <E:' 5: CI0' @B' >:<F' 5;7 '5;8' > 667@A' 5<@8 ' J8:8' G88B769' B8>68C58B' :7A;5' <:' > 1D B ! * = * ' 7' EA$ 0' $ 8G:7@58B' 7@' 7' ' : ' G:760' $

but beyond it it was otherwise, and we had always agreed, in our debates, that if it could be passed success was certain. The accompanying outline from a sketch taken from the door of the inn at Breil will help to explain. The letter A indicates the position of the Great Tower; C the "cravate" (the strongly-marked streak of snow referred to on p. 119, and which we just failed to arrive at on

the 26th); B the place where we now saw something that looked like a flag. Behind the point B a nearly level ridge leads up to the foot of the final peak, which will be understood by a reference to the outline facing p. 83, on which the same letters indicate the same places. It was just now said, we considered that if the point C could be passed, success was certain. Tyndall was at B very early in the morning, and I did not doubt that he would reach the summit, although it yet remained problematical whether he would be able to stand on the very highest point. The summit was evidently formed of a long ridge, on which there were two points nearly equally elevated—so equally that one could not say which was the highest—and between the two there seemed to be a deep

6 / * 4 ! , !U + ,' % %

"(! J % " " " ! I (%' J &#" ' " "# ' - $' " J J "*

9 I@ G CI' J ' G CI8B@ @B ' ; B' B:E@I' ' G :57@A' A6 ' <>' J7@8 J75;' 4 ?:8@ J ;< J ' !E=76 @5 5' 5;8 ECC8 ' J ;7C;' J ' 5< F I8 5;8 ><:5E@8 <>' ;7 ' 7@@ 0 =E5 ' C<E6B @<5P=:7EA' F 9 86>' 5< 68 ?8 E@576 5;8 :8 E65' J ' ;8 :B@ @B 67@A8:8B =<E5@ ' ' ><<67 ;' 6<?8:' ;<?8: ' :<E@B 5;8 <=!8C5' <>' ;7 ' >>8C57<@ 0 8?8@ >58:' ;8 ; ' =88@ C<@58 F G5E<E 69 :8!8C58B$;8 E@ ; B' 85 =8><:8 5;8 F8@ J8:8 B8 C:78B C<F7@A' <?8:' 5;8 G 5E:8 $;8:8 J '@< G:7@A' 7@ 5;87:' 58G K 5;89@ 5<<@ J8:8 B8>8 58B$;8 ::86 ' ;7B' 5;87:' ;8 B 0 =E5 5;8 <5;8: ' 7B@ ' F8@ J766 B< J ;8@ 5;89 ; ?8 =88@ =8 58@0 5; 5 5;8 F<E@5 7@ J ' ;<::7=68@ 7F G< 7=68@ @B < ><:5;$:<>8 <:' 9@B 66 5<6B F8 5;89 ; B' ::7?8B 9 $ ' ' D' $ ' &' $' 2 V ' @B' BF<@7 ;8B' F8' 5< ; ?8 @<5;7@A' F<:8' 5< B< J75;' 5;8 F<E@5 7@$ ' E@B8: 5<<B' ;7F' 5< 9' 5; 5' ;8 ;<E6B @<5' 5:9' A 7@0 @B: @' B<J@' 5< 5;8 ?766 A8 <>' (6 <E:@ @C;80 6F< 5' 7@C67@8B' 5< =8678?8' 5; 5' 5;8 F<E@5 7@' J ' 7@ CC8 7=68' 0 68 ?7@A' 5;8' 58@50 :<G8 0 @B' <5;8:' F 558: ' 7@' 5;8 ; @B ' <>' 4 ?:80 5< =8 G6 C8B' 5' 5;8 B7 D G< 6 <>' @9' G8: <@' J ;< J7 ;8B' 5< C8@B' 750 F<:80 ' F' >: 7B0 <E5 <>' ;"<@9' 5; @' >:' A8@8:< 759$;8:8 F 9' ; ?8 =88@' 5;< 8 J ;< =8678?8B' 5; 5' 5;8 558: ;<:@' C<E6B' =8 C8@B8B0 =E50 @9;<J0 5;87:' > 75;' B7B' @<5 =:7@A' ><:5;' J<:I $ %< <@8' 5:78B' A 7@' 7@' Q$

E 7@8 ' 5<<I' F8' 7@5< ' EG;7@8 =8><:8 :85E:@7@A' 5< <@B<@0 77B' ' J88I' >58:' 9@B 66R' B8>8 5 ' 6 9' <@8' @7A;50 >58:' ' E65:9' B 90 ; 6> 688G0 5< 7@A' =<E5 7@' <@8' <>' 5;8 =<F7@ 57<@ ' J ;7C;' 8:?8' ><:' =8B ' 7@' 5;8 7@@' I8G5 =9' 5;8 ' 8GE59 9<:' <>' ' (7668' B8 (6 <E7 80 6<<I7@A' 5' ' 5: @A8' :EBB7@8 ' <@' 5;8 C8767@A0 J ;7C;' ' 5;<EA;5 F7A;5 =8 <F8 8>>8C5 <>' 868C5:7C759 G:<BEC8B' =9' 5;8 7::75 D 57<@' <>' 5;8 F9:7 B ' <>' >68 ' 0 J ;8@' 5;8 A:8 5 =866 <>' 5;8 C;E:C;0 C6< 8 5' ; @B0 G8 68B' <E5$ J75;' 6<EB' @B ;E::78B' C6 @A<E:$ ' !EFG8B0 EG0 ><:' 5;8 ?<7C8 ' @B' F<?8 F8@5 ' <>' 5;8 G8<G68 7@' 5;8 ;<E 8 F B8 F8 5;7@I' <>' >7:8$ 5' J ' >7:8 0 @B' ' J' >:<F' F 9 J7@B<J0 <@' 5;8 <5;8:' 7B8 <>' 5;8 :7?8:0 A:8 5 ><:I8B' >6 F8 ' ;<<57@A' ;7A;' 7@5< 5;8

"BUT WHAT IS THIS?"

CHAPTER VI.

THE VAL TOURNANCHE—DIRECT PASS FROM BREIL TO ZERMATT (BREUILJOCH)—ZERMATT—ASCENT OF THE GRAND TOURNALIN, ETC. ETC.

"How like a winter hath my absence been
From thee, the pleasure of a fleeting year!"

W. SHAKESPEARE.

I CROSSED the Channel on the 29th of July 1863, embarrassed by the possession of two ladders, each twelve feet long, which joined together like those used by firemen, and shut up like parallel rulers. My luggage was highly suggestive of housebreaking, for, besides these, there were several coils of rope, and numerous tools of suspicious appearance, and it was reluctantly admitted into France, but it passed through the custom-house with less trouble then I anticipated, after a timely expenditure of a few francs.

I am not in love with the douane. It is the purgatory of travellers, where uncongenial spirits mingle together for a time, before they are separated into rich and poor. The douaniers look upon tourists as their natural enemies; see how eagerly they pounce upon the portmanteaux! One of them has discovered something! He has never seen its like before, and he holds it aloft in the face of its owner, with inquisitorial insolence. "But *what is* this?" The

8LG6 @ 57<@' 7 ' =E5' ; 6>' 57 > C5<:9$' Z E5' J ; 5'7 ' $ '^3 9 ' ;8' 6 97@A' ;<6B' <>' ' 675568' =<L$' Z <JB8:$3 Z E5'5; 5'75'7 ' ><:=7BB8@' 5<' C ::9' <>' G<JB8:' <@' 5;8' : 76J 9$3 Z ; 3 9 ' @<5;8:' @B' <6B8:' ; @B' Z G ' 5;8' 8>>8C5 ' <>' <@ 78E:' 03 @B' <E:' C<E@5:9F @K+J;<8 C;88I ' ; B' =8AE@' 5<' :8BB8@' E@B8:' 5;8' 5 :8 ' <>' ;7 ' >866<J 5: ?8668: ' K7 ' 66<J8B' 5<' B8G :5' J75;' ;7 ' ; 6> J<:@' 5<<5; =:E ;' J;768' 5;8' B7 C<F>758B' B<E @78:' A7?8 ' ' F7A;59' ;:EA' 5'5;8' 5: @A8' ; =75 ' <>' 5;< 8' Z J;< 8' 7@ E6 :' G< 757<@' 8LC6EB8 ' 5;8F' >:<F' 5;8' F :C;' <>' C<@57@8@5 6' 7B8 $3

9' :8 6' 5:<E=68 ' C<F F8@C8B' 5' E $;8' <>>7C7 6 ' 5;8:80' F<:8' ;<@8 5' @B' F<:8' <=5E 8' 5; @' 5;8' 4:8@C;F8@' B8C67@8B' 5' <@8' @B' 5;8' F8' 57F8' 5<' =8' =:7=8B0' <:' 5<' G ' F9' = AA A8' E@576' ' 57 > C5<:9' CC<E@5' <>' 75' J ' :8@B8:8B' 0 @B0' '5;89':8>E 8B' 5<' =8678?8' 5;8' 5:E8' 8LG6 @ 57<@0' ' J ' GESS68B' J ; 5'5<' 90' =E5' J ' G:8 8@569' :8678?8B' >:<F' 5;8' B768F F ' =9' <@8' <>' 5;8' F8@0' J ;<' J ' C68?8:8:' 5; @' ;7 ' >866<J 0' EAA8 57@A' 5; 5' ' J ' A<7@A' 5<' E:7@' 5<' 8L;7=75' 7@' 5;8' 5:885 '0 5; 5' ' F<E@58B' 5;8'6 BB8:' @B' = 6 @C8B' F9 86>' <@' 5;8' 8@B' <>' 750' 5;8@' 67A;58B' F9' G7G8' @B' GE5' 5;8' G<7@5' <>' 5;8' =>>7<@' 7@' 75 ' =<J60' @B' C E 8B' 5;8' =B5<@' 5<' A9: 58' :<E@B' F9' ;8 B$;8' :<G8 J ' 5<' I88G' = CI' 5;8' G8C5 5<: 0' @B' @' @A67 ;F @' 7@' F9' C<FG @9' J ' 5;8' A8@5$$ Z <@ 78E:' 7 ' C:<= 5' 5;8@' ^3 Z 8 0' C8:5 7@69$3 Z ' 5;8' 8>>8C5 ' <>' <@ 78E:' 5;8' C:<= 5'3

;8 8'6 BB8:' J8:8' 5;8' <E:C8' <>' 8@B68 ' 5:<E=68$' 85' E ' G ' <?8:' 5;8' B<E=5 ' <>' 5;8' AE :B7 @ ' <>' 5;8' <586' BR E:<G8' M :<F=855 N0' J;85;8:' ' G8: <@' 7@' 5;8' G< 8 7<@' <>' EC;' HE8 57<@ =68' :57C68 ' ;<E6B' =8' BF7558B' 5<' 5;87:0' ?8:9' :8 G8C5 =68' ;<E 80' @B' A<5' 5<' ; 5766<@0' 5' 5;8' 8@5: @C8' <>' 5;8' (6' <E:@ @C;8$' ' FE68' J ' C; :58:8B' 5<' C @9' 5;8F0' @B0' ' 5;89' J8:8' 5<' 6<@A' 5<' 67@A' C:< ' 75 ' = CI0' 5;89' J8:8' :: @A8B' 68@A5;J 9 0' @B' <@8' 8@B' G:<!8C58B' <?8:' 5;8' @7F 6R' ;8 B0' J;768' 5;8' <5;8:' 8L58@B8B' =89<@B' 75 ' 5 76$' ' FE68' J ;8@' A<7@A' EG' <:' B<J@' ;766' 6J 9 ' F<?8 ' J75;' ' !8:I9' C57<@0' @B' 7@' C<@ 8HE8@C8' <>' 5;7 ' 5;8' 6 BB8:' ;75' F9' FE68' 8?8:8' =6<J ' =8D 5J88@' 75 '8 :' @B' 7@' 75 '>6 @I $;8' =8 50' @<5' I@<J7@A' J; 5' 5: @A8' C:8 5E:8' 75' ; B' <@ 75 ' = CI0' @ 5E: 669' 5< 8B' 75 ' ;8 B' @B' 5;:8J' <E5

6f ' > ( ) ' ' < % ((D!' % <

75 ' 68A 0' @B' 5;7 0' <>' C<E: 80' <@69' F B8' 5;8' =6<J ' 5; 5' 75' :8C87?8B' F<:8' 8?8:8$ 5' 6 5' 75' : @' J 90' @B' J<?BB' ; ?8' G8:7 ;8B' =9' :<667@A' B<J@' ' G:8C7G7C80' 7>' 5;8' F8@' ; B' @<5' C EA;5' ;<6B' <>' 75 ' 5 76$;8' 8@B' <>' 5;8' F 558:' J ' 5; 5' ' F @' ; B' 5<' ><66<J' 5;8' FE680' ;<6B7@A' 5;8' 8@B' <>' 5;8' 6 BB8: 0' J ;7C;' <=67A8B' ;7F' 5<' F<?8' ;7 ' : F ' EG' @B' B<J@' 7@C8 @5690' @B' 5<' =<J' 5<' 5;8' ;7@B' HE :58: ' <>' 5;8' @7F 6'7@' ' J 9'5; 5' >><:B8B' F<:8' FE 8F8@5' 5<' ;7 ' C<F: B8 ' 5; @' 75' B7B' 5<' ;7F$

' J ' <@C8' F<:8' ' 2 ' ><:' 5;8' 558:;<:@0' ><:' ' ; B' ;8 :B' 7@' 5;8' G:7@A' <>' '5;8' C E 8' <>' 5;8' > 76E:8' <>' :<>8 <:' 9@B 660' @B' 68 :@5' 5; 5' 5;8' C 8' J ' @<5' <' ;<G868 ' '75' GG8 :8B' 5<' =8' 5' <@8' 57F8$ ' ><E@B' 5; 5' ;8' ::7?8B' ' > :' <@69' ' 5;8' @<:5;8:@' 8@B' <>' Z'5;8' ;<E6B8:$3 ;8' G<7@5' 5' J;7C;' ;8' 9 0P' 5;89'Z 5' B<J@' J75;' =:<I8@' ;<G8 0' 5;8' EF F75' J75;7@' ' 5<@8R 5;:<J' <>' E 0' =E5' 5766' B8>97@A' E 03' J ' @<5' 5;8' @<5C;' <:' C68>5' 5' 'ĊMJ;7C;' 7 ';58: 669' J75;7@' ' 5<@8R 5;:<J' <>' 5;8' EF F75N0' =E5' @<5;8:' @B' F<:8' ><: F7D B =68' C68>5' 5; 5' 7@58:?8@8 ' =85J88@' 5;8' @<:5;8:@' 8@B' <>' Z'5;8' ;<E6B8:'3' @B' 5;8' C<F F8@C8F8@5' <>' 5;8' >7@ 6' G8 I$ 5'7 ' F :I8B' ' <@' 5;8' <E567@8' J;7C;' > C8 ' G$ $ ::86' @B' 66' 5;8' F8@' J;<' ; B' =88@' J75;' F8' I@8J' <>' 5;8' 8L7 58@C8' <>' 5;7 ' C68>50' @B' <>' 5;8' G7@@ C68' J;7C;' :< 8' =85J88@' 75' @B' 5;8' >7@ 6' G8 I' @B' J8' ; B' >:8HE8@569'5 6I8B' =<E5' 5;8' =8 5' F @@8:' <>' G 7@A' 5;8' G6 C8$] @' 5;7 ' J8' B7 A:88B0' =E5' J8' J8:8' =<5;' <>' <G7@7<@' 5; 5' J;8@' J8' A<5' 5<' Z'5;8' ;<E6B8:'3' 75' J<E6B' =8' @8C8 :9'5<' =8 :' B<J@' A: BE 669'5<' 5;8' :7A;5' <:' 5<' 5;8' 68>50' 5<' ?<7B' C<F7@A' 5<' 5;8' 5<G' <>' 5;8' @<5C;$ E5' 9@B 66R ' G :590' >58:' ::7?7@A' 5' Z'5;8' ;<E6B8:03' J ' 68B' =9' ;7 ' AE7B8 ' 6<@A' 5;8' C:8 5' <>' 5;8' :7BA80' @B0' C<@ 8HE8@5690' J;8@' 5;89'A<5' 5<' 75 ' @<:5;8:@' 8@B0' 5;89'C F8' 5<' 5;8' 5<G' <>' 5;8' @<5C;0' 7@ 58 B' <>' 5;8' =<55<F K 5<' 5;8' B7 F 9' <>' 66' =E5' 5;8' ::86 $ ' :$ 9@B 66R ' J<:B ' :80' Z ;8' :7BA8' J ' ;8:8' G675' =9' ' B88G' C68>5' J;7C;' 8G : 58B' 75' >:<F' 5;8' >7@ 6' G:8C7G7C80' @B' 5;8' C 8' =8C F8' F<:8' ;<G868 ' ' J8' C F8' F<:8' @8 :$3 ;8' :<>8 <:' BB 0' Z ;8' F<E@5 7@' 7 ' 20

P' $!(" -' 9' EAE 5' 0' $

5' ;<G77F C16C0' 7@' > :50' ; B' '@ F<0K ć R @A8' @;77$"

>885' ;7A;0' @B' 20 ' >885' ; B' =88@' CC<FG67 ;8B$3 8' A7C569' B8C87?8B' ;7F 86>0 =9' 5;8' = :<F85:7C' F8 E:8F8@5 ' <>' 7A@<:' &7<:B @<' 5;8'7!<5C;'7 '@<'68 '5; @' '>885'=86<J'5;8' EF F75$;8' AE7B8'") 658:'M':$ 9@B 66' 9 N' 7B' 75' J ' 7FG< 7=68' 5<' G:<C88B0' @B' 5;8' ::86 0' GG8 68B' 5<'><:' 5;87:' <G7@7<@' M5;7 ' 7 '5;87:' <J@' CC<E@5N0' A ?8' ' @' @ J8:0' Z) 8' :8' G<:58: 0' I' 9<E:' AE7B8 $3 8@@8@0' 5;E ' 68>5' 5<' ;7F 86>0' Z J '>7@ 669' ><:C8B' 5<' CC8G5' B8>8 5$3 9@B 66' ; B' @8?8:5;868 ' CC<FG67 ;8B' @' B? @C8' <>' =<E5' 2 ' >885' <?8:' <@8' <>'5;8' F< 5' B7>>7CE65' G :5 ' <>'5;8' F<E@5 7@$R

;8:8' :8' F 58:7 6'B7 C:8G @C78 '=85J88@'5;8'GE=67 ;8B'@ :: 57?8 ' <>' :<>8 <:' 9@B 66'P' @B'5;8'?8:= 6' CC<E@5 ' <>'5;8' ::86 $;8' ><:F8:' 9 '5;8' F8@' ; B' 5<' =8' Z E:A8B' <@03 5; 5' Z'5;89' G:<@<E@C8B' >6 569' A 7@ 5' 5;8' >7@ 6' G:8C7G7C803 Z'5;89'9786B8B' <' E558:6903 @B' 5; 5' 8@@876' 7B0'7@' @ J8:'5<' '>7@ 6' GG8 6' F B8'5<';7F0' Z) ; 5' C<E6B' 'B<0' 7:'^ @<5' <@8' <>'5;8F' J<E6B' CC<FG @9' F8$R 5' J '5;8' CGE: 58' 5:E5;$3 .8 @ @5<7@8' ::86 9 '5; 5' J;8@' :<>8 <:' 9@B 66' A ?8' 5;8' <:B8:'5<'5E:@'89' J<E6B' ; ?8' B? @C8B'5<'8L F7@8' 5;8' :<E580' ' ;8' B7B' @<5'5;7@I'5; 5'>E:5;8:'G:<A:8 ' J '7FG< 7=680' =E5' ;8' J ' 5<GG8B' =9'5;8' :<>8 <:0' @B' J ' @ 5E: 669' <=67A8B' 5<' ><66<J'5;8' <5;8: $5' ;8 8' B7 A:88F8@5 ' F 9' J866' =8' 68>5' 5<' =8

P' (" -'7#:#+' 0' @B' .);'' 3 =)#' $

_' ' ; ?8' 8@58:8B' 7@5<'5;7 ' F 558:'=8C E 8' FEC;' E:G:7 8' ; '=88@'8LG:8 8B'5; 5' ::86 J ' =68' 5<' G ' 5;7 ' G6 C80' J75;<E5' @9' A:8 5' B7>>7CE659' 7@' 0' J;7C;' 5E:@8B'=CI' <' 5:<@A' 'G :59'7@' Q$;8'C E 8'<>' :<>8 <:' 9@B 66R'B8>8 5' J ' 7FG69'5; 5' ;7 ' 8C<@B'AE7B8'M) 658:N'B7B'@<5'A7?8' 7B'$5< 8@@8@' J ;8@'75' J ':8HEE 8B0' @B'5; 5'5;8' ::86'+%! "')%$.$ "'3! "#"' 0$#(' :)3'1##)' (#"' '*%($#('' .$ $ ::86 @<5'<@69'I@8J'<>'5;8'8L7 58@C8'<>'5;7 'G6 C8'=8><:8'5;89'C F8'5<'750=E5' 6J 9 '=8678?8B'7@'5;8'G< 7=76759'<>'G 7@A'750' @B'<>' C8@B7@A'5;8' F<E@5 7@'0 @B'; B';8' =88@'68 B8:'5<'5;8'G :59' 'B<@<5'B<E=5'5; 5';8'F7A;5'; ?8'5 I8@' 9@B 66'5<'5;8'5<G$ E5'J;8@' GG8 68B'5<'5<' 7 5' 8@@8@' M ' J7 0' @B'5;8' :8C<A@7 8B' 68 B8:' <>'5;8' G :59N0' J '75'67I869'5; 5';8'M @' 5 67 @0' 'G<:58:N0' J ;<'7@58@B8B'5<'=8'5;8';7: 5'F @' EG'5;8'F<E@5 7@'=9' ':<E58' J ;7C;' ;8':8A :B8B'G8CE67 :69' ;7'<J@0' J<E6B' :8@B8:' @9' 7B^

5'7 '@<5' <'8 9'5<'E@B8: 5 @B' ;<J' ':$ 9@B 66' @B' 8@@8@'<?8:6<<I8B'5;8'8L7 5D 8@C8'<>'5;7 'C68>50'><:' 75'7 ' 88@'<?8:' 8?8: 6'G<7@5 ' <>' 5;8' C<FG 0' @B'G :57CE6 :69' J866'>:<F'5;8' <E5;8:@' 7B8'<>'5;8' ;8<BE68'G $ 5766'F<:8'B7>>7CE65'7 '75'5<'8LG6 7@' ;<7?'5;8' :<>8 <:'C F8'5<'C<@ 7B8:'5; 5';8'J '<@69' ' 5<@8R 5;:<J'>:<F'5;8' EF F750

=8' B<@8' 5' :876(' B858: F7@8B' 5<' F I8' 5;8'5<E:' <>'5=8' F<E@5 7@(' @B' C<F F8@C8B' =9'7@?8@57@A' ' G ' >:B @' :876' 5<' V8: F 550P' 7@' G6 C8' <>'5;8' ; CI@898B' ;8<BE68$ @9'<@8' J;<'6<<I ' 5'5;8' F G' J766' 88'5; 5'5;8'6 558:' G ' F I8 ' 'C<@ 7B8: =68' B85<E:'5<'5;8'8 50(@B(77G :8@56NR A<8 '<E5'<>'5;8'J 9$ ' 5;<EA;5'5; 5'75' J 'G< 7=68 ' 5<' 5:7I8' <E5' ' ;<:58:' :<E58(' =<5;' 7@' B7 5 @C8' @B' 7@' 57F8(' @B' J8' 85' <E5'<@'5;8' B'<>' EAE 50' 5<' C ::9'<E5' 5;8' 7B8 $) 8' ><66<J8B' 5;8' ;8<BE68' G 5;'><:' <F8'57F8(' =E5' HE7558B'75' J ;8@'75' =<:8' J 9' 5<'5;8'8 50' @B' I8G5' 5: 7A;5'<@' E@576' J8' 5:EC I'5678' F<: 7@8'<>'5;8' <@5' 8:?7@'A6 C78:$ * E:'5: CI' 5766' C<@57@E8B'7@' ' 5: 7A;5'67@8'EG' 5;8'C8@5:8'<>'5;8'A6 C78:'5<'5;8'><<5'<>' '5<<5;'<>':<CI(' J ;7C;'!E5 'G:<D F7@8@569'<E5'<>'5;8':7BA8' M4E:AA8@A: 5N' C<@@8C57@A'5;8' 558: ;<:@' J75;'5;8' ;8<BE68;<:@$;8' ;8 B'<>'5;8'A6 C78:' J ' C<@@8C58B' J75;'5;7 '675568' G8 I'=9' ' 588G' = @I'<>' @<J'(=E5' J8' J8:8' =68' 5<' A<' 5: 7A;5'EG(' @B' 5:EC I'5;8' <6' 5'75 '6<J8 5'G<7@(5' '675568' 5<'5;8' :7A;5'$M5; 5'7 '5<' 9(' 5<'5;8'8 5N'<>'5;8' =<?8 F8@57<@8B' G8 I$ @' 5;8'@<:5;'5;8:8'J ' '@<J 6<G8'C<::8 G<@B7@A'5<'5; 5' <@'5;8'<5;8:' 7B8(' =E5' ; 6> @ ;<E:'5<<I'E '5<'75 '= 8'(J8'5;8@'=<:8' J 9'<?8:' 5;8'@8 :69'68?86' G6 58 E'<>'5;8'4E:AA8@A685 C;8:(' F I7@A' ' 5: 7A;5' 5: CI'5<'5;8' <:@670' >:<F' J ;8@C8' J8' B8 C8@B8B' 5<' V8: F 55' =9'<@8' <>'5;8'J8 / I@<J@'G 5; $;7 'G ' ; ' =88@'BE==8B'5;8' :8E76!<C;' =9'5;8' J7 ' E:?89<: $ 5'7 ' '>8J'>885';7A;8:'5; @'5;8' ;8<BE68(' @B' 75' F 9' =8(' :8C<F F8@B8B' 5<'5;< 8' J ;< :8' > F767 :' J75;'5; 5' G (' ' 75' A7?8 ' 8HE 669'>7@8' ?78J (' @B' 7 ' CC8 7=68' 5' 66'57F8 $ E5' 75' J766' @8?8:' =8' >:8HE8@58B' 67I8' 5;8' ;8<BLB8(' ' 5;8' @<J ' 6<G8' 5'75 ' EF F750' 5' C8:5 7@' 57F8 (' J766' :8HE7:8' 5;8' E 8' <>'5;8' L8$ 5'5<<I' E ' 7L' ;<E: ' @B' 'HE :58:' 5<' A<'>:<F' <@8' G6 C8' 5<' 5;8'<5;8:(' J ;7C;' J ' @' ;<E:' 6<@A8:'5; @' J8' J<E6B' ; ?8'<CCEG78B' =9'5;8' ;8<BE68(65;<EA;'5;8'B7 5 @C8' 7@' F768 '7 '68 $

5'7 ' 5 58B'7@'<@8'<>'5;8' $ @<58 =<<I ' <>'5;8'6 58' :7@C7G 6' .$ '$ 4<:=8 (' 5; 5' 5;7 ' B8G:8 7<@(' @<J'C 668B' 5;8' :8E76!<C;(' J '><:F8:69' $ ' G ' =85J88@'5;8'(6' <E:@ @C;8' @B' V8: F 55(' @B' 5; 5'75' J ' = @B<@8B'><:' 5;8' ;8<BE68'7@'C<@ 8HE8@C8'<>'C; @A8

P' 88'5;8'F G'<>'5;8' 558:;<:@' @B'75 'A6 C78: $

7@' 5 ; 8' A6 C78: P' ; 8' E5 ; <: 759' ><:' 5 ; 8' 5 58 F 8@5' J ' @<5' A7?8@$ ' G:8 EF 8' 75' J ' >:<F' 6<C 6' 5: B757<@0' =E5' ' :8 B769' C:8B75' 7 5 0' ><:0' =8><:8' 5 ; 8' 57 F 8' 5 ; 5' 5 ; 8' A6 C78: ' ; B' ; :E@ I' 5<' <' A:8 5' @' 8L58@50' 5 ; 8' 588G' @<J 6<G8 ' =<?8' F 8@57<@8B0' 7@' 66' G:<= =76759 0' B7B' @<5' 8L7 50 ; E50' F< 5' 67 I 869 0' 5 ; 8' A6 C78: ' 68B' =9' ?8:9' A8@568' A: B78@5 ' EG' 5<' 5 ; 8' E F F 750 7@' J ; 7C ;' C 8' 5 ; 8' :<E58' J<E6B' ; ?8' ><: F 8B' 5 ; 8' @ 5E: 6 ; 7A ; J 9' =85 J 88@' 5 ; 8' 5 J<' G6 C8 $ 5' 7 ' > :' >:<F' 7 F G< 7=68 0' 7>' 5 ; 8' A6 C78: ' C<@57@E8' 5<' B7 F 7@7 ;' 5' 5 ; 87:' G:8 8@5' : G7B' : 58Y " 5 ; 5' 5 ; 8' ; 8<BE68' 75 86>0' 5 ; 8' 8 78 5' @B' 5 ; 8' F< 5' >:8HE8@58B' <>' /' 5 ; 8' ; 7A ; 8:' 6G7@8' G 8 0' F 90' 7@' 5 ; 8' C<E: 8' <>' ' >8 J' 98 : 0' =8C<F8' <F 8 J ; 5' B7>>7CE650' @B' 7>' 5 ; 7 ' ;<E6B' ; 8' 5 ; 8' C 80' 5 ; 8' G:< G8:759' <>' V8: F 55' J 766' G:<= =69' E>>8:$f

1' 2' 3445 64 76' 839' : #5 ; 45 :' 47' 4< 9' 6745' <2' #' ' :3=9- 5%2

_' ; 8' EF F 75' <>' 5 ; 8' ; 8<BE68' G ' 7 ' 0 ' >885' =<?8' 5 ; 8' 8 $ 5' 7 ' 8 57 F 58B' 5 ; 5' <>' 6 58' =<E5' ' 5 ; <E @B' 5<E:7 5 ' ; ?8' C:< 8B' 75' G8:' @@EF $ @' 5 ; 8' J7@58:0' J ; 8@' 5 ; 8' C:8? 8 ' :8' =:7BA8B' <?8:' @B' G :57 669' >7668B' EG0' @B' 5 ; 8' J8 5 ; 8:' 7 ' > ?<E:D =680' C<J ' @B' ; 88G' G ' <?8:' 75' >:<F' V8: F 55' 5<' (6' <E:@ @C ; 8' A6 C78:' 5<' 5 ; 8' @' 5 ; 8' ' &' 2' 2 ' 1 Q0' ' 8' E @:8' GG8 : ' 5<' ; ?8' 5 I8@' FE68 ' >:<F' 7 876' <?8:' 5 ; 8' (6' <E:@ @C ; 8' A6 C78:' 5<' 5 ; 8' E F F 75' <>' 5 ; 8' ; 8<BE68' 0' @B' <@' 'G:8D ?7<E ' !<E:@89' ; 8' B7B' 5 ; 8' F 80' 6 <' 7@' 5 ; 8" F 7BB68' <>' EAE 5$ 8' B7 57@C569' F 8@57<@ ' Mcf QQQ N' 5 ; 5' 5 ; 8' A6 C78:' J ' C<F G685869' C<?8:8B' J 75 ;' @<J0' @B' 5 ; 5' ' C:8? 8 ' J8:8' <G8@$ ' B<' @<5' 5 ; 7@ I' F E68 ' C<E6B' ; ?8' =88@' 5 I8@' <?8:' 5 ; 8' F8' G<57 7@' @9' EAE 5' BE:7@A' 5 ; 8' G 5' 58@' 98 + ' J 75 ; <E5' A:8 5' B7>>7CE659$ @' 5 ; 5' F <@5 ;' 5 ; 8' A6 C78:' 7 ' E E 669' ?8:9' = :8' <>' @<J0' @B' F @9' C:8? 8 ' :8' <G8@$; 89' :8' 8 769' 8@<EA ;' ?<7B8B' =9' 5 ;< 8' <@' ><<50' ; E5' J<E6B' G:<?8' ?8:9' 5:<E=68 <F 8' 5<' F E68 $

'>8J' B 9 ' =8><:8' J8' C:< 8B' 5 ; 8' :8E76!<C ;' 7@' 0' :$ 4$ <: ; 8 B' F B8' ' G : 6686' G '5<' 75$ 8' C:< 8B' 5 ; 8' :7BA8' <@' 5 ; 8' 9 ' 7B8' <>' 5 ; 8' 675568' G8 I0' @B' ><66<J 8B' ' <F 8 J ; 5' F<:8' B7>>7CE65 ' :<E58' 5 ; @' <E: $ @' +, -K' ' J @58B' 5<' E 8' :$ <: ; 8 BR' G 'M 88' ; G0' L?$N0' ; E5' ><E@B' 5 ; 5' 75')" ' @<5' G< 7=68' 5<' B8 C8@B' 5 ; 8' V8: F 55' 7B8' 0 ><:0' B F R@A' 5 ; 8' 5 J<' 98 : ' J ; 7C ;' ; B' 86 G 8B0' 5 ; 8' A6 C78:' ; B' ; :E@ I' <' F EC ;' 5 ; 5' 75' J ' C<F G685869' 8?8:8B' >:<F' 5 ; 8' E F F 75' <>' 5 ; 8' G 0' @B' J 8' C<E6B' @<5' A85' B<J@' 5 ; 8' :<C I ' 5 ; 5' J 8:8' 8LG< 8B$

' ; 8' BF7: =68' 75E 57<@' <>' V8: F 55' ; ' =88@' I @<J@' ><:0' 5' 68 50' 5 ; 7:59' 98 : 0' =E5' 75' 7 ' <@69' J 75 ; 7@' 5 ; 8' 6 5' 5J 86?8' <:' ><E:588@' 5 ; 5' 75' ; ' =8C<F 8' @' GG:<?8B' 6G7@8' C8@5:8$;77 59' 98 : ' A<' 5 ; 8' ; 8<BE68' G 0' 5 ; 8') 87 5 ; <:0' @B' 5 ; 8' <6' BR 8:8@ 0' J 8:80' ' =8678?80' 5 ; 8' <@69' :<E58 ' 8?8:' 5 I8@' >:<F' V8: F 55' C:< ' 5 ; 8' 8@@7@8$ 6G $ 5' 5 ; 8' G:8 8@5' 57 F 8' 5 ; 8:8' :8' M7@C6E 7?8' <>' 5 ; 8 8' G 8 ' @B' <>' 5 ; 8' ? 6689' :< BN' @<' 68 ' 5 ; @' 5 J 8@59 ><E:' B7>>8:8@5' J 9 ' 7@' J ; 7C ;' ' 5<E:7 5' F 9' A<' >:<F' V8: F 55$;8' EF F 75 ' <>' <F 8' <>' 5 ; 8 8' C<6 ' :8' F<:8' 5 ; @' 20 ' >885' =<?8' 5 ; 8

6# / * *) ' F ' 1 ! * !' ; !

::8f @B' ' J @B8:8B' <E5' A 7@' 7@' 5;8' >58:@<<@0' @B' J8@50' >7: 5' <>' /0' 5<' ' > ?<E:758' G<5' J75;' 5<E:7 5 ' @8 :' 5;8' 8@B' <>' 5;8' <:@8:' A6 C78:' M<:0' G:<G8:69' G8 I7@A0' 5;8' <B8@' A6 C78:N0' 5<' '675568' ?8:B @5' >6 5K 5EBB8B' J75;' 2E $ ' && K 5;8' B867A;5' <>' J 7 @ ' <>' =88 0' J;<' A 5;8:' 5;8:8' 5;8' ;<@89' J;7C;' >58:J :B ' GG8 :' 5' 5;8' 3 ' D$

@' <E:' :7A;5' 5;8' A6 C78: 5<::8@5' 5;E@B8:8B' B<J@' 5;8' ? 6689' 5;:<EA;' 'A<:A8' J75;' G:8C7G75<E ' 7B8 0' @<5' 8 769' GG:< C;8B' 0 ><:' 5;8' 5E:>' 5' 5;8' 5<G' J ' 67GG8:90' @B' 5;8' :<CI ' ; B' 8?8:9J;8:8' =88@' :<E@B8B' =9' 5;8' A6 C78:0K J677C;'><:F8:69' 8L58@B8B' > :' J 9$;7 ' A<:A8' 88F ' 5<' ; ?8' =88@' F B8' C;78>69' =9' 5;8' 5<::8@50' @B' 5<' ; ?8' =88@' 8LC ? 58B' E= 8HE8@569' 5<' 5;8' :85:8 5' <>' 5;8' A6 C78:$ 5' 88F ' <' =8C E 8' @<5' F8:869' EG<@' 75 ' J 66 ' :8' 5;8:8' 5;8' F :I ' <>' :E@@7@A' J 58:0' =E5' 8?8@' EG<@' 5;8' :<E@B8B' :<CI ' 5' 5;8' 5<G' <>' 75 ' J 66 0' 5' ' ;87A;5' <>' 8?8@59' <:' 87A;59' >885' =<?8' 5;8' G:8 8@5' 68?86' <>' 5;8' 5<:D :8@50' 5;8:8' :8' <F8' <>' 5;< 8' HE88:' C<@C ?7578 ' J;7C;' : G7B' 5:8 F ' 6<@8' :8' I@<+?@' 5<' G:<BEC8' <@' :<CI $

' 675568' =:7BA80' GG :8@569' >: 760' G @ ' 5;8' 5<::8@5' !E 5' =<?8' 5;8' 8@5: @C8' 5<' 5;7 ' A<:A80' @B' >:<F' 75' <@8' G8:C87?8 0' =87@A' > ;7<@8B' 7@' 5;8' :<CI ' =86<J0' C<@C ?7578 ' 7F76 :' 5<' 5;< 8' 5<' J;7C;' :8>8:8@C8' ; '!E 5' =88@' F B8$;8' 5<::8@5' 7 ' 88@' ;E::97@A'><:J :B $ <5' 8?879J;8:8$ @' <F8' G6 C8 ' 5;8' J 58:' 5:7I8 ' G:<!8C57@A' @A68 0' @B0' 5;:<J@' = CI' =9' 5;8F0' :8F 7@ ' 6F< 5' 5 57<@ :90' 8BB97@A' :<E@B' @B' :<E@B'0 7@' <5;8: 0' <= 5:EC57<@ ' >67@A' 75' EG' 7@' ><E@5 7@ 0' J;7C;'G6 9'G8:G85E 669'<@' 5;8'2 ' E:> C8 ' <>'<?8:; @A7@A' F 8 '0 @B' <F857F8 ' B<' <' 7@' EC;' ' J 9' 5; 5' 5;8' J 58:' @<5' <@69' J<:I ' EG<@' 5;8' E@B8:' E:> C8 0' ;E5' :<E@B' 5;8' C<:@8:0 5; 5' 7 ' 5<' 90' EG<@

68?80' <>' 5;8' 8 0' @B' 'A<<B' F @9' <>' 5;8F' C @@<5';8' :8C<F F8@B8B' 875;8:' >:' 8 80' <:' '<>>8:7@A' 5;8' ;<:58 5') 9' >:<F' V8:F 55' 5<' 5;8' ? 6689 ' @B' ?766 A8 ' 5<' J;7C;' 5;89' 68 B$

V8:F 55' 75 86>' 7 ' 576' <@69' '?766 A8' J75;' '7@; =75 @5 'M =<E5' 5;7:59' <>' J;<F' :8' AE7B8 N0' J75;'G7C5E:8 79E8' C; 685' BJ8667@A 0' =6 CI' J75;' A8$;8';<586 0' 7@C6EB7@A' 5;8' 7@@' <@' 5;8' 7>>86=8:A0' 66' =86<@A' 5<' <@8' G:<G:785<:' M $ 68L @B:8' 8768:N0' 5<' J;<F' 5;8' ?766 A8' @B' ? 6689' :8' ?8:9' F EC;' 7@B8=58B' ><:' 5;87:' G:< G8:759' @B' J;<' 7 ' 5;8' =8 5' G8: <@' 5<' C<@ E65' ><:' 7@><@E 57<@0' <:' 7@' 66' C 8 ' <>' B7>>7CE659$

the surfaces which are *not* opposed to the general direction of the current. In all cases *concavities* are being produced. Projecting angles are rounded, it is true, and are more or less convex, but they are overlooked on account of the prevalence of concave forms.

Cause and effect help each other here. The inequalities of the

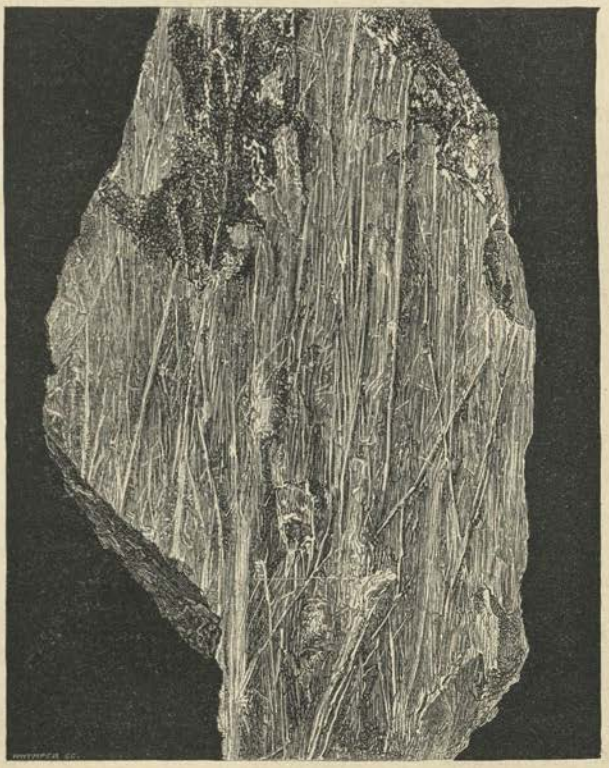
WATER-WORN ROCKS IN THE GORGE BELOW THE GORNER GLACIER.

torrent bed and walls cause its eddyings, and the eddies fashion the concavities. The more profound the latter become, the more disturbance is caused in the water. The destruction of the rocks proceeds at an ever-increasing rate; for the larger the amount of surface that is exposed, the greater are the opportunities for the assaults of heat and cold.

When water is in the form of glacier it has not the power of making concavities, such as these, in rocks, and of working upon surfaces which are not opposed to the direction of the current. Its

nature is changed; it operates in a different way, and it leaves marks which are readily distinguished from those produced by torrent-action.

The prevailing forms which result from glacier-action are more



STRIATIONS PRODUCED BY GLACIER-ACTION (AT GRINDELWALD).

or less *convex.* Ultimately, all angles and almost all curves are obliterated, and large areas of flat surfaces are produced. This perfection of abrasion is rarely found, except in such localities as have sustained a grinding much more severe than that which has occurred in the Alps; and, generally speaking, the dictum of the veteran

<=G (! " # ′ ! $%& '′ ′ #′ ! * ,′ #

A8<6<A7 5′ 5EB8:0′ HE<58B′ =86<J0′ 7 ′ E@B<E=58B69′ 5:E8′P′ %<5′ F8:869′ C @′5;8′ <G8: 57<@ ′ <>′ 8L57@C5′ A6 C78: ′=8′5: C8B′7@′B85 76′ =9′ F8 @ ′ <>′5;8′=< 8 ′<>′ :<CI′ G<GE6 :69′58:F8B′ $ ′ 2 J E ′=E5′5;87:′ 8>>8C5 ′7@′5;8′ AA:8A 580′<@′ ′: @A8′<>′F<E@5 7@ ′<:′ @′8@57:8′C<E@5:90′ C @′=8′:8C<A@7 8B′ <F857F8 ′ 5′ ′B7 5 @C8′<>′>7>588@′<:′5J8@59′F768 ′ >:<F′5;8′7@C8 @5′:8G85757<@′ <>′5;8 8′C<@?8L′><:F $

5′ J766′@<5′=8′E@7@58:8 57@A′5<′C<@ 7B8:0′><:′ ′>8J′F<F8@5 0′5;8′ J 9′7@′J;7C;′5;89′ :8′G:<BEC8B′=9′A6 C78: 0=E5′>7: 5′<>′ 66′J8′FE 5′ 6<<I′= CI′5<′5;8′57F8′ J;8@′5;89′; B′@<′8L7 58@C8$

d′ $ >′8?8:′5;8′ E:> C8′<>′5;8′8 :5;′J ′ ′5:E8′ ′7>′75′; B′=88@′ 5E:@8B′<E5′>:<F′ ′6 5;80′75′J ′C8:5 7@69′@<5′ <′J;8@′5;8′A:8 5′A6 C78: ′ K+J;<8′G<<:′:8F@ @5′ J8′ @<J′ 88′ 7@′5;8′ 6G K=8A @′ 5<′ 5:85C;′ > :′ J 9′>:<F′5;8′F<E@5 7@ ′<@′5<′5;8′6<J6 @B ′<>′ J75S8:6 @B′ @B′ <@′5<′5;8′G6 7@′<>′ 78BF<@50K E@68 ′A8<6<A9′7 ′ ′678$ >′A8<6<A7C 6 :8 <@7@A′7 ′@<5′ ′B86E 7<@′ @B′ ′ @ :80′ A8′EG<@′ A8′; B′G 8B′ J 9′=8><:8′5;7 ′5<<I′G6 C8C :<CI ′; B′C:EF=68B′ 7@5<′ BE 50′ @B′ 5;87:′G :57C68 ′; B′=88@′:8 : : @A8B0 67A;5@7@A′; B′ 5FCI′5;8′G8 I 0 >:<5′ ; B′C68>5′5;87:′:7BA8 0 ? 6 @C;8′ ; B′ J8G5′5;87:′ 6<G8 0 8 :5;HE I8′ ; B′ >7 E:8B′5;8′ <760 @B′5<:7B@5′ ; B′5: @G<:58B′ 5;8′B8=:7′> :′ @B′J7B80K ; B′8 58@′7@5<′5;8′C68>5 0′; B′C<:8B′5;8′ 6<G8 0′ @B′ ; B′B88G8@8B′5;8′ >7 E:8′><:′ @′7@B8>7@758′68@A5;′ <>′ 57F8$ 5′ J 0′5;8:8><:80′@<5′ ′=: @′ @8J′J<:6B′EG<@′ J;7C;′5;8′ A6 C78: ′C<F F8@C8B′5<′J<:I K ′A6<=8′J;7C;′; B′=88@0′ ′75′J8:80′ !E 5′5E:@8B′<E5′<>′ ′F<E6B′0 =E5′75′ J ′ C ::8B′ @B′J8 5;8:D =8 58@′0′5;8:8′J8:8′EG<@′75′;766 ′ @B′B 68′7@@EF8: =680′C: CI′ @B′ C; F 0′ G8:7578′ @B′B8G:8 7<@ 0′J;7C;′;8 5′ @B′C<6B′; B′G8@8D 5: 58B0′ @B′) 58:′; B′ 5766′>E:5;8:′B88G8@8B$;8′ J<:6B′J ′ 7@C 6CE6 =69′<6B′J;8@′5;7′F<B8F′A6 C7 6′G8:7<B′=8A @′75′<G8: D 57<@′0′ @B0′ 65;<EA;′75′ C<@57@E8B′><:′ ′6<@A′57F80′ 5;8′ A6 C78:

P′ Z′ .@′B8′> 75′68′F78EL′<<@ 5 5>′8 5′HE8′4 7<@B8′A6 C78: ′ 8′B7 57@AE8′ B8′ C8668′ B8′8 EL′8E′C8′HE8′6′G:8F75:8′G:<BE75 B8′:<C;8′C<@?8L8′<E′F<E5<@@88 0′ 5 @B7′HE8′6′ 8C<@B8′B<E@8′678E′5′B8′C<@C ?758 $3K :<>$ $′ 5EB8:0′ ′ ′ ′ (′!2

J8:8 E@ =68 5< <=6758: 58 5;8 8>>8C5 ' <> 5;8 <6B8:' @B A:8 58:' G<J8: $;8 8 ' 2 ' <J8 5;87:' G8CE67 :' ><: F' 5< 5;8 A:7@B7@A' <> 7C8 C8:5 7@69 =E5 5;89 J8:8 =6<CI8B <E5 @58:7<:' 5< 5;8 ><: F 57<@ <> 5;8 A6 C78: $;89 J8:8 J;8@ 5;8 7C8 H7:7558B 5;8F 5< J; 5 5;89 J8:8 =8><:8 5;8 A6 C78: ' =8A @ 5< J<:I ?8:9 FEC;' 67I8 J; 5 @ <6B J<:@ C<7@ 7 ' 5< <@8 5; 5 7 ' @8J69 5:ECI$;8 ;<66<J ' +8:8 @<5 < FEC;' >>8C58B =E5 5;8 8F7@8@C8 ' J8:8 A:<E@B B<J@ 5;8 B8G:8 7<@ ' <> 5;8 F<B8667@A' :8F 7@8B =E5 5;8 G :5 ' 7@ :8;8 J8:8 5 I8@ J 9 5' :8HE7:8 5;8:8><:8 8F8 675568 8>><:5 5< 7F A7@8 J; 5 5;8 :<CI' >< : F ' J8:8 67I8 =8><:8 5;8 A6 C78: ' <> 5;8 A6 C7 G8:7<B =8A @ 5< <G8: 58 EG<@ 5;8F =E5 J8 C @@<5 =8 J:<@A 7@ EF7@A 5; 5 5;8 >< : F ' J8:8 7F76 :' 5< 5;< 8 8L;7=758B =9 J8 5;8:8B :<CI ' 5 5;8 G:8 8@5 57F8$

d Q$ &6 C78:' 7C8 7 ' G6 57C @B C @ =8 F<E6B8B =9 G:8 E:8 5< 6F< 5 @9 ><: F$ 8@C8 7> ' A6 C78:' C<E6B :8F 7@ G8:>8C569 5 57<@ :9 75 ' J<E6B =8 F<E6B8B =9 F8 @ ' <> 75 ' <J@ J87A;5 5< 5;8 E:> C8 EG<@ J;7C;' 75 :8G< 8B$ E5 A6 C78: ' F<?8 @B C<@ 8D HE8@569 5;8 =<55<F' <> <@8 7 ' @8?8:' C<FG685869 F<E6B8B 5< 75 ' :<CI ' =8B$;8 G:8 E:8 >:<F' 5;8 J87A;5 <> 5;8 7C8 7 ' <GG< 8B =9 5;8 F<57<@ <> 5;8 A6 C78: @B 5;8 7C8 7 ' E:A8B G 5 B8G:8 7<@ ' =8><:8 75 C @ =8 F<E6B8B 5< 5;8F$

<:' 8L FG68 685 47A$ ' <> 5;8 B7 A7 F' <@ G$ 22 :8G:8 8@5 ' 8C57<@ <> ' G<:57<@ <> 5;8 =<55<F' <> ' A6 C78:' J;7C;' 7 ' =8A7@@7@A 5< J<:I' EG<@ J8 5;8:8B :<CI ;' ;' 7@B7C 57@A' 5;8 A6 C78: @B 5;8 ::<J' 5;8 B7:8C57<@ 7@ J;7C;' 5;8 A6 C78:' 7 ' F<?7@A$;8 7C8 >58:' G 7@A' 5;8 8F7@8@C8 ' ;' O;' *;' B<8 ' @<5 C<FG685869 >766 5;8 ;<66<J ' ;' "; 1

;8 8 5;7@A ' C @ =8 <= 8:?8B 5 5;8 7B8 ' <> F< 5 C<@ 7B8: =68 A6 C78: @B G :57CE6 :69 J866 5 8?8: 6 G6 C8 ' <@ 8 C;' = @I' <> 5;8 &<:@8:' A6 C78:$ 5 8?8: 6 G6 C8 ' M EC;' ' 5 ' 7@ 47A$ N <@8 C @ A85 E@B8:@8 5;' @B 88 5;8 7C8 =:7BA7@A' ;<66<J @ @B @<57C8 G:<<> <> 75 ' F<57<@ @B 5; 5 75 7 ' G :57 669 F<E6B8B 5< 5;8

;8 <E567@8 7 ' '5: C7@A' >:<F' 'G;<5<A: G;' <> J8 5;8:8B E@A6 C7 58B :<CI $

rocks, in the flutings upon the bottom of the glacier leading up to the eminences by which they have been caused.

Fig. 1.

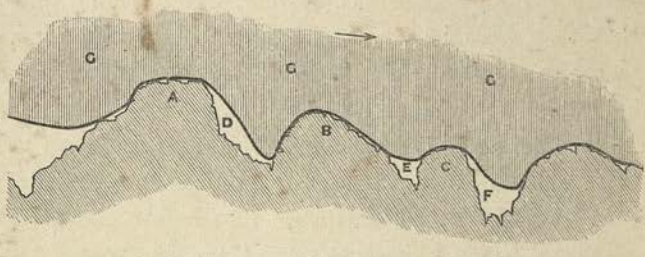


Fig. 2.

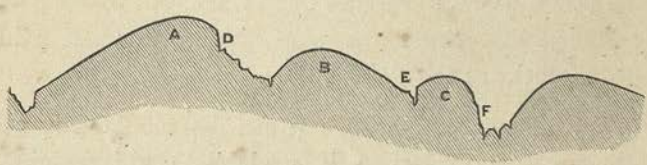


Fig. 3.

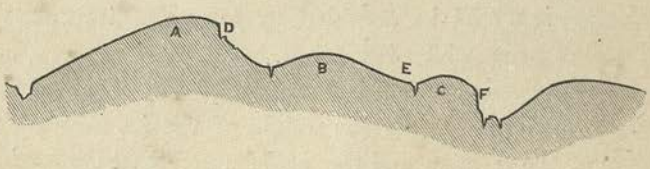
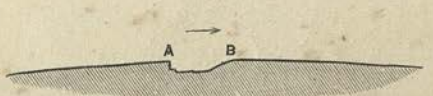


Fig. 4.

Fig. 5.



§ 3. It is, therefore, evident that when a glacier passes over ground such as has been indicated in § 1, it is supported upon a number of points, and bridges many hollows; that the parts of the rock which the ice touches sustain the entire weight and friction of the glacier, and are alone abraded, while the hollows escape.

d' 2$ E5' J6776$ 5' 5678' F<57<@' <>' 5 ; 8' A6 C78 :' 7 ' E : A7@A' 75' <@ J : B ' @B' ' B7FG : <$ 7<@$ 0' 5678' J87A ; 5' <>' 75 ' 7C8' 7 ' G : 8$ 7@A' 75' ' 5 ; 8' B7c N : M" 7<@ 0' @B' @FC8' 5 ; 8' 7C8' 5 : 7I8 ' 5 ; 8' @8L5' G : <!8C57<@' 5' ' 6<J8 :' 68?86' 5 ; @' 75' 68>5' ' M47A$ N$

d' $ 678' 7F F8B7 58' 8>>8C5' 7 0' 5 ; 5' 5 ; 8' F7@<:' G8 : 7578 ' <>' 5 ; 8' :<CI' E>>8 : 0' @B' C ; 77+>69' 5 ; < 8' J ; 7C ; ' :8' <GG< 8B' 5<' 5 ; 8' B7 : 8C57<@' <>' F<57<@' <>' 5 ; 8' A6 C78 : $; 89' F 9' =8' C5E 669' C : ; 8B0' <:' >: AF8@5 ' J ; 7C ; ' :8' 6 : 8 B9' 6<< 8' F 9' =8' ; : E ; 876' <:' C : G8B' J 9' 0 7@' @9P' C 8' 567<9' B7 !7G8 :' M47A$ QN$

d' $ @' C<@ 8HE8@C8' <>' 5 ; 7 0' 5 ; 8' A6 C78 :' =8C<F8 ' EGG<:58B' EG<@' ' 6 :A8 :' :8 0' @B' 75 ' G<J8 :' 7 ' 8L8 : 58B' <?8 :' ' A : 8 58 :' E :> C8$ 5' ><66<J 0' 6 <0' 5 ; 5' 5 ; 8' F<E@50' 7@' B8G5 ; 0' <>' 5 ; 8' F 558 :' J ; 7C ; ' 7 ' :8F<?8B' C<@ 5 @569' B7F7@7 ; 8 0' 7>' 5 ; 8' !!<J8 :' 5 ; 5' 7 ' 8FG6<98B' C<@D 57@E8 ' 5<' ; 8' 5 ; 8' F8$

d' 1$ ' 6<@A' C<@57@E @C8' <>' = : 7<@0' >: <F' 5 ; 8' >: 7C57<@' <>' 5 ; 8' 7C8' @B' =9' 5 ; 8' : G7@A' <>' >< : 87A@' F 558 :' C<@5 7@8B' 7@' 750' 6<J8 : ' 5 ; 8' 68?86' <>' 5 ; 8' : <CI' 8F7@8@C8 ' 0' =E5' E :> C8 ' <>' >: C5E : 8 ' <:' B8G : 8 7<@ ' 7@' 5 ; 8' : <CI' J ; 7C ; ' :8' @<5' <GG< 8B' 5<' 5 ; 8' B7 : 8C57<@' <>' 5 ; 8' F<57<@' <>' 5 ; 8' A6 C78 :' : 8F 7@' E@ = : B8B0' 7>' 5 ; 89' :8' G8 : G8@B7CE6 :' 5<' 5 ; 8' B7 : 8C57<@' <>' 5 ; 8' F<57<@0' <:' @95 ; 7@A' 67I8' G8 : G8@B7CE6 :' 5<' 75' 0 @B' 5 ; 89' J 766' C<@57@E8' 5<' 8L7 5' M 65 ; <EA ; ' =8C<F7@A' 68 ' @B' 68 N' E@576' 5 ; 8' 8@57 :8' =8B' <>' 5 ; 8' A6 C78 :' M5 ; 5' 7 0' 5 ; 8' E :> C8' <>' 5 ; 8' : <CI N' ; ' =88@' : 8BEC8B0' <?8 :' 6 : A8' : 8 0' @8 : 69' 5<' ' G6 @8' E :> C8$

<CI ' J ; 7C ; ' ; ?8' =88@' : <E@B8B' =9' A6 C78 :' C57<@' M EC ; ' ' 7@' 47A $ Q0' N' : 8' 58 : F8B' $ ' 2 ' @B' E@ = : B8B' E :> C8 ' <>' ' 2 ' M EC ; ' ' ; ' ; 47A $ Q0' N' : 8' 58 : F8B' = ' ; 8' = ' <>58@' >><: B' E 8>E6' 7@B7C 57<@ ' <>' 5 ; 8' B7 : 8C57<@ ' 7@' J ; 7C ; ' 8L57@C5' A6 C78 : ' ; ?8' F<?8B$

d' $ >' A6 C78 : ' 5766' C<@57@E8' 5<' J<: I' EG<@' $ ' 2 ' 5 ; 8' 8>>8C5 ' J ; 7C ; ' :8' G : <BEC8B' :8' <@69' @' 8L58@ 7<@' <>' 5 ; < 8

B8 C76=8B 7@ d 1$;8 ;7A;8 5 G<7@5 ' <> 5;8 :<CI ' :8 F< 5 >>8C58B J;768 5;8 7B8 ' <> B8G:8 7<@ ' 8 C G8 J;<669 <: G :57 669 CC<:BD 7@A ' 5;89 :8 E@<GG< 8B <: <GG< 8B 5< 5;8 B7:8C57<@ <> 5;8 F<57<@ <> 5;8 A6 C78:$ F7@8@C8 ' :8 8@5I869 :8F<?8B 7@ C<E: 8 <> 57F8 @B 5;87: G< 757<@ @ @B 5;< 8 <> C: CI ' <: B8G:8 7<@ @ :8 <@69 7@B7C 58B =9 > 7@569 F :I8B C<@?8L7578 ' @B C<@C ?7578 ' M47A$ 2N$;8 8 F 9 5 68@A5;' B7 GG8 :@ @B 6 :A8 :8 ' <> :<CI' F 9 =8 :8BEC8B 5< G6 @8 E:> C8 $

EC;' E:> C8 ' :8 C<F F<@ 7@ &:88@6 @B@ 7@ C6< 8 G:<L7F759 5<@ @B 8L58@B7@A E@B8:@8 5;@ 8L7 57@A A6 C78: $ ' G:<G< 8 5< C 66 c5;8F ' ' 5< B7 57@AE7 ;'5;8F>:<F $ ' 2 @

d $ 5:7 57<@ ' :8 >:8HE8@569 G:<BEC8B <@ :<CI ' =9 5;8 G A8 <> A6 C78: ' M 88 766E 5: 57<@ <@ G$ 2 N$;89 :8 C E 8B =9 ><:87A@ F 558:' 7@5;8 =<55<F ' <> 5;8 A6 C78: @ >7L8B 7@ 5;8 7C8@ <:' :<667@A <:' 67B7@A =85J88@ 75 @B 5;8 :<CI $;7 ' ><:87A@ F 558:' 7 ' G :569 F B8 EG <> >: AF8@5 ' J;7C;' ; ?8 =88@ :8F<?8B >:<F 5;8 :<CI =8B =9 5;8 C57<@ <> 5;8 A6 C78: @ @B G :569 >:<F :<CI ' J;7C;' ; ?8 > 668@ <@ 5< 5;8 E:> C8 <> 5;8 A6 C78: @ @B J;7C;' ; ?8 E= 8HE8@569 5E F=68B 7@5< C:8? 8 @ B:' <5;8:J7 8 J<:I8B 5;87:' J 9 B<J@$>

&+8@8: 669 G8 I7@A@ 5:7 57<@ ' :8 C<F F<@ EG<@ :<CI ' J;7C;' :8 <@69 H 2 @ =E5 5;89 :8 : :8:@ <:' 8@57:869 J @5E:A@ EG<@

P ' 8 E:8 J ' 5;8 E5;<:' <>5;8 58:F $ ' 2 ' @B';8 A ?8 Md N 5;8 ><66<J7@A :8 <@ ><:' 75 ' B<G57<@ [K Z 4 :5;8:' <>@ =8;7@B' 5;8 ?766 A8 <> .E?7 @ ' <:' @?7<@@8@ :<CI ' :8 88@ ; ?7@A' 5;8 ; G8 J;7C;' ' C 66 ' ' ' ;8 ;766D <CI ' MF<@5 A@8 N 5< J;7C;' ' GG69 5;7 ' 8LG:8 7<@ @ :8 C<FG< 8B <> ' A:<EG <> :<E@B8B G:<F7@8@C8 ' M5 58 ' 7:<@B78 N$ $ $;8 8 C<@57AE<E ' @B >:8HE8@5 B<F8 ' M:<@B8E: N A7?8 ' ' J;<68 5;8 7FG:8 7<@ <> ' J866 >E:@7 ;8B >688C8 <:' <@8 <> 5;< 8 J7A ' J;7C;' :8 6 < C 668B * '3

;8 58:F J ' @ GG:<G:7 58 <@8 GG678B ' '8 E E:8 E 8B 75 =E5 75 7 ' E@D F8 @7@A J;8@ GG678B 5< 5;8 F<:8 G8:>8C569 A6 C7 58B 68?8668B E:> C8 $

*Y Z @8 J;< 7 ' > F767 :' J75;' 5;8 5: CI <> 5;7 ' F7A;59 8@A7@8 J766 :8C<A@7 8 5 <@C8 J;8:8 5;8 6 :A8 =<E6B8: ' ; ?8 ;<66<J8B <E5 5;87:' B88G8:' >E: :<J @ J;8:8 F 66 G8==68 ' ; ?8 B: J@5;87:' >7@8:' F :I @ J;8:8 5;8 5<@8 ' J75;' @AE6 :' 8BA8 ' ; ?8 68>5 5;87:' ; :G C: 5C;8 @ J;8:8 @B @B A: ?86 ; ?8 :E==8B @B F<<5;8B 5;8 :<CI9 E:> C8 @B 68>5 75 =:7A;5 @B G<67 ;8B$ $ $ $;8 8 F :I ' :8 @<5 5< ;8 F7 5 I8@ ;9 @9 <@8 J;< ; ' C :8>E669 <= 87 ?8B 5;8F 5;8 C: 5C;8 @ >E::<JR @ A:<<?8 @ :8

$ ' * ' ;89' 7@B7C 58' ' C<FG : 57?869' 8 :69' @B' C< : 8' 5 A8' <>' A6 C78: C57<@$

d' $ <:8' <:' 68 ' J 58:' 7 ' 6J 9 ' ><E@B' >6<J7@A' E@B8:@8 5;' A6 C78: $ 5' 7 ' G:<BEC8B' =9' =6 57<@' <>' 5;8' E:> C8' <>' 5;8' A6 C78:0 @B' =9' <5;8:' C E 8 $ @' 5;8' 8 :678:' 5 A8 ' <>' A6 C78:' C57<@' Mdd' Q 1N' 75' >7@B ' ' >:88' C<E: 8' F<@A' 5;8' B8G:8 7<@ '=8@8 5;' 5;8' 7C8' 0 =E5' ' 5;8' :<C; '=8C<F8' F<<5;8:' @B' >6 558:' 75' ; ' F<:8' B7>>7CE659' 7@' B7 C<?8:7@A' <E5685 0 @B' FE 5' F 58:7 669' 7 5' 7@' :8BEC7@A' 5;8' >:7C57<@' <>' 5;8' 7C8' EG<@' 5;8' :<CI 0 @B' 7@' 5;8' G:<BEC57<@' <>' ;7A;69 ' G<; ;8B' E:> C8 0 =9' C E 7@A' 68 ' ?7<68@5' @B' F<:8' E@7><:@E' =: 7<@$

EC;0 75' GG8 : ' 5<' F80 :8' 5;8' J 9 ' 7@' J;7C;' A6 C78: ' J<:I' EG<@' :<CI 0 @B' G:<BEC8' E:> C8 ' 2 ' <:' * ' 8><:8' 'HE75' 5;7 ' E=!8C50 'J7 ;' 5<' F I8' <@8' <:' 5J<' :8F :I ' EG<@' 5;8' > C5 ' J;7C;' ; ?8' =88@' 5 58B0 @B' 5<' B: J' <@8' <:' 5J<' C<@C6ED 7<@ ')";7C;' 5;89' 88F' 5<' J :: @5$

$;8' G:<BEC57<@' <>' 5;8' G8CE67 : ' :<E@B8B' :<CI ><:F ' J;7C;' :8' 58:F8B' $ ' 2 3 ' 7 ' 5<' ;8' 55:7=E58B' 5<' 5;8' 8L5:8F869' 6<J' : 58' 5' J;7C;' 5;8' =<55<F ' <>' A6 C78: ' F<?80 @<5' 68 ' 5; @' 5<' 5;8' G6 57C759' <>' 5;8' 7C8$; 5' 5;8' : 58' 7 ' ' 6<J' F 9' =8' 7@>8::8B' >:<F' 5;8' > C50 567 5' 5;8' F 668 5' >: C5E:8 ' <@' :<CI ' EG<@' J;7C;' A6 C78:' ; ' J<:I8B' ><:' @9' 68@A5;' <>' 57F80 ; ?8' 5;87:' 9 $ ' @B' 5;87:' ' ' ; 5' 7 ' 5<' 90 =8><:8' 5;8' 7C8' 7 ' =68' 5<' F<?8' 7@

6 J 9 ' :8C5767@8 :0 58@B7@A' 7@' 5;8' B7:8C57<@' 7@' J;7C7' 5;$8' A6 C78:' 7 ' F<?7@A0 @B' F< 5' B7 57@C5' <@' 567 5' 7B8' <>' 5;8' E:> C8 7@8HE 67578 ' > C7@A' 5;8' B7:8C57<@' <>' 5;8' F<?7@A' F 0 J;768' 5;8' 688 7B8' :8F 7@ ' F< 569' E@5<EC;8B$ $ $ $ $

Z' 8:8' @B' 5;8:8' <@' 5;8' 7B8 ' <>' 5;8' A6 C78:' 75' 7 ' G< 7=68' 5<' G8@85: 58' =85J88@' 5;8' J 66 ' @B' 5;8' 7C8' 5<' 'A:8 5' B8G5;0 @B' 8?8@' 5<' ><66<J' EC;' 'A G' 5<' 5;8' ?8:9' =<55<F' <>' 5;8' ? 6689' 0 @B' 8?8:9J;8:8' B<' J8' >7@B' 5;8' E:> C8' <>' 5;8' 7C8' >:8558B' ' ' ; ?8' B8 C:7=8B' 750 J75;' 5<@8 ' <>' 8?8:9' 7S80 >:<F' 5;8' G8==68' 5<' 5;8' =<E6B8:0 @B' 6 <' J75;' @B' @B' A: ?86' <>' 66' <:5 0 >:<F' 5;8' C< : 8 5' A: 7@' 5<' 5;8' >7@8 50 @B' 5;8 8' F 58D :7 6 0 F<:8' <:' 68 ' >7:F69' 85' 7@' 5;8' 7C80' ><:F' 5;8' A: 57@A' E:> C8' J75;' J;7C;0 <@' 75 ' <@J :B' F<?8F8@5' B<J@' 5;8' 6G7@8' ? 6689 0 75' 68 ?8 ' 8?8:9J;8:8' E@F7 5 58 =68' 5: C8 ' <>' 75 ' G A8$3 K A 7S0 7@' $ ' ' $

<F8' C 8 ' <?8:' C ?7578 ' <@69' @' 87A55 ;' <>' @' 7@C ;' C:< 0'75'7 '><:C8B' B<J@' 7@5<' 5;8F0' @B' 5:7I8 ' 5;8' 675568' C67>> ' <:' 6<G8 ' J ;7C;' :8' GG< 8B' 5<' 5;8' B7:8C57<@' <>'75 ' F<57<@' 5' ' 6<J8:' 68?86' 5; @' 75'68>5' 5;< 8' <@' 5;8' <5;8:' 7B80K J ;7C;' 6 558:' <@8 ' :8F 7@' ; :G' @B' E@D :<E@B8B$;7 ' C @' >:8HE8@569'=8' <= 8:?8B0' 8?8@' 7@' F< 5' F7@E58' >: C5E:8 0' EG<@' A6 C7 58B' :<CI ' J ;7C;' 5;8' 7C8' ; ' @<5' 6<@A' HE7558B$+' 47A$ 0' G$ 220' :8G:8 8@5 ' @' 8L FG68' 0 5;8' ::<J' G<7@5 ' <E5' 5;8' B7:8C57<@' 7@' J ;7C;' 5;8' A6 C78:' ; ' F<?8B0' 0' 5;8' 9 $ ' @B' ' 5;8' '

;7 ' >><:B ' ' F8 @ ' <>' B7 57@AE7 ;7@A' A6 C78:' >:<F' J 58:' C57<@' "7@' ; @B' G8C7F8@ ' <>' :<CI$ >P

Q$ 678:8' 7 ' 58 G@' 5<' =8678?8' 5; 5'7>' A6 C78: ' J8:8' 5<' F<?8' J75;' : G7B7590' 7@ 58 B' <>' J75;' EC;' 8L5:8F8' B867=8: 57<@0' @AE6 :' E:> C8 ' J<E6B' @<5' ;8' 2 ' =E5' >6 5' E:> C8 ' J<E6B' =8' G:<BEC8B' >:<F' 5;8' =8A7@@7@A$; 5'7 ' 5<' 90'7@ 58 B' <>' 5E:@7@A' <E5' E:> C8 0' EC;' ' :8' ;<J@' 7@' 5;8' 8C57<@$' 47A$ 0' G$ 220' >58:' F @9' C8@5E:78 ' <>' J<:I0' A6 C78: ' F7A;5' G:<BEC8' 7F76 :' <@8 ' 5<' 47A$ 20' <:' 8?8@' >6 558:0' 7@' 5;8' C<E: 8' <>' ' >8J' ;<E: $;8' F<E@5' <>' >6 5@8 ' J ;7C;' J<E6B' =8' G:<BEC8B' J<E6B' B8G8@B' EG<@' 5;8' : 58' <>' 5;8' F<57<@' @B' 5;8' =E6I' <>' 5;8' 7C8$

:<>8 <:' 588@ 5:EG0' <>' <G8@; A8@0' :8 B' 5<' F8' 7@' 10' >:<F' @' E@GE=; ;8B' $7@' ;7 ' G< 8 7<@0' ' ;7A;69' 7@58:8 57@A' CC<E@5' <>' <F8' 8L5: <:B7@ :9' 8>>8C5 ' J ;7C;' J8:8' G:<BEC8B' 7@' C86 @B0' 7@' 5;8' 98 :' 1Q 0' =9' A6 C78:' 7@' : G7B' F<57<@$ 5' 88F ' 5; 5' 7@' 5;8' @87A;=<E:;<<B' <>' 5;8' F<E@5 7@' U<56EA! 0' 7@' 5;8' 8L5:8F8' <E5;' <>' 5;8' 7 6 @B0' 6 :A8' =<B78 ' <>' J" 58:' ><:F8B' E@B8:@8 5;0' <:' J75;7@0' 5;8' A6 C78: ' M875;8:' <@' CC<E@5' <>' 5;8' 7@58:7<:' ;8 5' <>' 5;8' 8 :5;0' <:' >:<F' <5;8:' C E 8 N0' @B' 5' 68@A5;' CHE7:8B' 7::8 7 57=68' G<J8:0' 5<:8' 5;8' A6 C78: ' >:<F' 5;87:' F<<:7@A ' <@' 5;8' 6 @B0' @B' J8G5' <:' >6< 58B' 5;8F' <?8:' 8?8:9' <= 5 C68' 7@5<' 5;8' 8 $:<B7A7<E ' F 8 ' <>' 7C8' J8:8' 5;E ' =<:@8' ><:' ' B7 5 @C8' <>' =<E5' 58@' F768 ' <?8:' 6 @B' 7@' 5;8' G C8

P' &6 C7 58B' :<CI ' J ;7C;' ' 98' =88@' 8LG< 8B' 5<' 5;8' 5F< G;8:8' ><:' @9' 68@A5;' <>' 57F8' 0' 6< 8' <>' C<E: 8' /' EC;' B867C 58' 5<EC;8 $

5' 88' G$ 1$

<>$ '>8J' ;<E: '0 @B'5;87:'=E6I' J ' <'8@<:F<E 0'5; 5'5;89'C<?8:8B' 5;8' 8 '><:' 8?8@' F768 '>:<F'5;8' ;<:80' @B' :8F 7@8B' A:<E@B'7@'<@8' ;E@B:8B'> 5;<F $;8' B8@EB 57<@' <@' 5;8'6 @B' J 'EG<@' 'A: @B' C 68$ 66' EG8:>7C7 6' CCEFE6 57<@'J8:8' J8G5' J 90' @B'5;8'=8BD :<CI' J '8LG< 8B$ 5' J 'B8 C:7=8B0'7@'A: G;7C'6 @AE A80';<J' 66' 7::8AE6 :7578' @B' B8G:8 7<@'J8:8'<=U58: 58B0' @B' 'F<<5;' E:D > C8'<>' 8?8: 6'F768' :8'J '6 7B';:80' @B'5; 5'5;7' :8';B'5;8' GG8 : @C8'<>'; ?7@A'=88@'YG '$' ' A@' 7 BF7557@A'5;8'G< 7=76759'<>' 8L AA8: 57<@'7@'5;8' @ :: 57?8'

P' ;8' CC<E@5'<>' :<>8 <:' 588@ 5:EG' J 0' '=8678?80' C<G78B' F @9'98 : ' A<0' J;8@';8'J '5: ?8667@A'7@' C86 @B0'>:<F' @' <:7A7@ 6 C86 @B7C' $:<>8 <:' 7!' IE/0'<>' /G 6 0' J '> ?<E:8B'=9' :<>8 <:' 588@ 5:EG' J75;' ' 7A;5'<>';7' $0' @B' G:7@58B' <F8'8L5: C5'>:<F'75'7@';7' J<:I' '! '') ' <G8@; A8@0' 1$;8'><66<J7@A'G : A: !7; 0' J;7C;' :8>8:'5<'5;7' G< 7=69'E@7HE8'<CCE::8@C80' :8'5 I8@' >:<F'5;8' @A67 ;'5: @ 6 57<@'<>'5; 5'J<:I'[K

Z' 5'5;8'C<F F8@C8F8@5'<>'5;8'8:EG57<@' '5:8 F':=E: 5'><:5;0'C<@ 7 57@A'G:7@C7D G 669'<>'; 6> F8658B' @<J' @B'6 :A8' F 8'<>'7C80' J;7C;'5EF=68B' =<E5'7@'5;8' 8' 671I8' >6< 57@A'7 6 @B'0 J;768 0' 7FE65 @8<E 690' @<5;8:' 5:8 F' 7 E8B'7@' ' <E5;D 8 58:69' B7:8C57<@0' @B' 7@>67C58B' A:8 5'7@!E:9' <@' 5;8'6 @B$;8'>7: 5'<>'5;8 8'5J< 5:8 F'>7668B'5;8' 8'J75;'7C8'5<' EC;' @' 8L58@5' 5; 5'8?8@'>:<F'5;8';7A;8 5'F<E@D 5 7@'75' J '7FG< 7=68' 5<' 88' <G8@' J 58:' 5766' 75' J '=:<I8@' EG'=9'5;8' C57<@'<>'5;8' J ?8 $ 5'5;8@'B:7>58B' J8 5J :B' '>:' ' 891! @8 0' @B' EG' 7@5<'5;8':7?8:' 6<@A' 5;8' C< 50' <'5; 5'6 :A8' 7C8=8:A' J8:8' 68>5' 5 @B7@A'7@'5;8'=8B'<>'5;8':7?8:'7@'5;8' 6>E $;8'A:8 58:' G<:57<@0' ;<J8?8:0'<>'5;8'7C8'5; 5'; B'=88@' G:8?7<E 69' B7 C; :A8B'7@5<'5;8' 8 0' '>:' '5;8'898' C<E6B':8 C;$ 4E:5;8:0'75' F B8'75' J 9'5;:<EA;'U8:67EA :'? 66890' @B' B FF8B' EG'5;8' 5:8 F'5;8:8$;8' B86EA80':0' F<:8' G:<G8:69' G8 I7@A0'5;8'7C80' C ::78B0' F<:8<?8:0'7F F8@ 8' F 8'<>' :<CI'J75;'750 @B'7@'5;8'?7C7@759'<>' !=7787> ;=>B70' 'F<E@5 7@'<@' 9:B 6 @B:0' ' :<CI'<>'5J8@59' > 5;<F ' 7@' ;87A;50'8@57:869' B7 GG8 :8B'0 @<5'5<' G8 I'<>'<5;8:' 7@ 5 @C8 $ @8'C @'><:F' <F8'7B8 '<>'5;8' 6575EB8'<>'5;7 '= ::78:'<>'7C80' J;8@'75'7' F8@57<@8B'5; 5'>:<F' =>B =:8II '> :F0'J;7C;'678 0';7A;'EG' <@' '>!8)'<>'5;8' F8' @ F80'<@8'C<E6B'@<5' 88' !=:687> ;=>B7'<GG< 758'0'J;7C;'7'' '>866' 2'>885'7@';87A;50 =E5'7@'<:B8:'5<'B<' <0';B'5<'C6 F=8:'EG' 'F<E@5 7@' 6<G8'8 5'<>' =>B =:8II 'Q ' >885';7A;$;8'B7 5 @C8' =85J88@' =>B =:8II ' @B' !=:687> ;=>B7'7 '<@8'M' @7 ;N' A8<A: G;7C 6'F768'0'<:'5;8'>7>588@5;'G :5'<>' 'B8A7B8$3

HE<58B' =86<J0' 5;8:8' 7 ' @<50' ' 5;7@I0' @9' :8 <@' 5<' B<E=5' 5;8' 6758: 6' CCE: C9' <>' 5;8' G :57CE6 :' G<7@5' 5<' J;7C;' 558@57<@';' !E 5' =88@' B: J@0' @B' ;8@C8' 75' J<E6B' GG8 :' 5; 5' 5;8' 8>>8C5 ' G:<BEC8B' <@' :<CI ' =9' A6 C78:' 7C8' 7@' : G7B' F<57<@' F 9' =8' 7B8@57C 6' J75;' 5;< 8' C E 8B' =9' 75' >58:' ' A:8 5' 6 G 8' <>' 57F80' J;8@' 75' 7 ' J<:I7@A' 5' 75 ' <:B7@ :9' : 58$

$;8 8' :8 E65 ' :8' @<5' E:G:7 7@A' J;8@' J8' :8F8F=8:' 5; 5' A6 C78: ' :8' 6J 9 ' 8@B8 ?<E:7@A' 5<' J<:I' 7@' :7A;5' 67@8 $ 677 ' 7 ' G:<?8B' =9' 5;8' F :I ' 5;89' 68 ?80' J;7C;' A 7S' ; ' J866' G<7@58B' <E5' M 88' @<58' 5<' G$ 2 N' :8' 6J 9 ' 7G<:8' <:' 68 '

;7 ' B7 G< 757<@' 5<' J<:I' 7@' :7A;5' 67@8 0' C<F=7@8B' J75;' 7@ =76759' 5<' <G8: 58' EG<@' B8G:8 7<@ ' M8LC8G5' 5<' 5;8' 67F758B' 8L58@5' 6:8 B9' ;<J@N0' G<7@5 ' 5<' 5;8' :8 <@' J;9' 75' 7 ' 5; 5' "E657F 5869' 66' @A68 0' @B' 6F< 5' 66' CE:?8 0' :8' <=;58: 58B0' @B' 6 :A8' :8 ' <>' >6 5' E:> C8 ' :8' G:<BEC8B' R MG$ 2 N$

5' ;<7BB' =8' <= 8:?8B' 5; 5' A6 C7 58B' :<CI 0' <>' 5;8' ><: F ' 58: F8B' ' C @@<5' G< 7=69' ; ?8' =88@' 8:<B8B' 5<' @9' A:8 5' B8G5;' =9' A6 C78: ' BE:7@A' 5;8' F<B8:@' P' A6 C7 6' G8:7<B$

;8' B8A:88' <>'>6 5@8 ' <>' A6 C7 58B' :<CI ' =8 : ' ' B7:8C5' :86 57<@' 5<' 5;8' F<E@5' <>' G<J8:' J;7C;' ; ' =88@' 8F G6<98B$ @' 5;8' 8 :678:' 5 A8 ' Mdd' Q 1N' 5;8' ><: F ' :8' :<E@B0' 7@' 5;8' F<:8' B? @C8B' <@8 0' 5;89' :8' >6 5$;8' 2 ' <>' 5;8' ><: F' <>' $ ' 2 ' 7 ' G:<<>' 5; 5' @<' A:8 5' F<E@5' <>' B8 5:EC57<@' ; ' 5 I8@' G6 C80' @B' 5;87:' = ' :8' BB757<@ 6' @B' 8HE 669' 5:<@A' 8?7B8@C8$

2$ 4<:0' E@68 ' 75' C @' =8' ;<J@' 5<' ; ?8' =88@' G:<BEC8B' E= 8D HE8@569'5<' 5;8' :85:8 5' <>' 5;8' 7C80' 8?8@' ' ' ' = ' ' ' A6 C7 58B' :<CI' 7@><: F ' E ' 5; 5' J8' 88' ' E:> C8' J;7C;' J ' 8LG< 8B' 5<' 5;8' 5F< G;8:8' =8><:8' 5;8' A6 C78: ' =8A @' 5<' J<:I0' J;768' ' = ' ><E@B' 5<A85;8:0' <@8' >58:' @<5;8:0' J75;7@' @' :8 ' <>' ' >8J' 9 :B ' M @B' 5;89' :8' <>58@' <' ><E@B' 7@' 6<C 67578 ' J;8:8' 8@<: F<E ' B8G5;' <>' 8LC ? 57<@' ; ' =88@' G:8 EF8B' 5<' ; ?8' 5 I8@' G6 C8' 5;:<EA;' A6 C78:

P' &8<6<A7 5 ' =8A7@' 5<' G8 I' <>' A6 C7 6' G8:7<B ' <>' ' FEC;' F<:8' :8F<58' B 58 ' 5; @' 5; 5' 5<' J;7C;' ' F' :8>8::7@A$

6 / * ##" #%# $ & ! #(! $%

A8@C9N :8@B8: 75 C8:5 7@ 5; 5 5;8 8@57:8 E:> C8 <> 5;8 =8B :<CI ; =88@ 6<J8:8B 5 5;8 F< 5 =E5 >8J 9 :B $

Y) 8 5;8:8B :<CI EG<@ F 66 C 68 B< @<5 5 I8 ; G8 EC; :8 >7AE:8B 7@ 5;7 B7 A: F =E5 : 5;8: EC; 5;< 8 J;7C; :8 ;<J@ 7@ 47A$ G$ 22$) 8 B< @<5 >7@B B88G G75 <: 5:<EA; G:<BEC8B 7@ :<CI MJ; 58?8: F 9 =8 5;87: @ 5E:8 <: C<FG< 757<@N =9 J8 5;8:7@A <: 5;:<EA; @9 <> 5;8 <:B7@ :9 <G8: 57<@ <> 1 @ 5E:8$ 5766 68 B< J8 >7@B 6 :A8@EF=8:<> EC; G75 <: 5:<EA; C6< 8 5< <@8 @<5;8:$;8:8><:8 J;8@ J8 88 * = 5 @B ;47A$ G$ 22 M 8G : 58B G8:; G >:<F 8 C; <5;8:=9 B7 5 @C8 <> 68 5; @ B<S8@ >8850 @B :8G:8 8@57@A 75 ; =88@ 6:8 B9 5 58B 5;8 :8F 7@ <> ;<66<J <: >: C5E:8 J;7C; 8L7 58B =8><:8 5;8 A6 C78:=8A @ 5< J<:INC 75 7 C8:5 7@ 5; 5 5;8 8F7@8@C8 *; =85J88@ 5;8F ; ?8 =88@ 6<J8:8B <@69 >8J >8850 @B G:<= =68 5; 5 5;8 B8G5; <> 5;8 :<CI J;7C; ; =88@ :8F<?8B B<8 @<5 8LC88B 5;8 68@A5; <> 67@8 B: J@ >:<F 5< ;8 E@J<:@ * = 5< A6 C7 58B :<CI ; ?8 5;8:8><:8 G8C7 6 ? 6E8 5;89 >><:B 7@B7C 57<@ M 65;<EA; 7FG8:>8C5 <@8 N <> 5;8 2 <> 8LC ? 57<@ 5; 5 ; =88@ G8:><:F8B =9 5;8 A6 C78: J;7C; J<:I8B =<?8 @B :<E@B 5;8F$

$ @ d 75 J 5 58B 5; 5;8 F<E@50 $ <> 5;8 F 558: J;7C; 7 :8F<?8B C<@ 5 @569 B7F7@7 ;8 7> 5;8 G<J8: 5; 5 7 8FD G6<98B C<@57@E8 5< =8 5;8 F8 ; 5 7 5< 90 7> A6 C78: >885 5;7CI F<?7@A B<J@ ? 6689 5 5;8 : 58 <> >885 G8: @@EF 7 =68 5< :8F<?8 B8G5; <> <@8 7@C; >:<F 5;8 J; <68 <> 5;< 8 G<:D 57<@ <> 5;8 E:> C8 5; 5 75 5<EC;8 7@ 5;8 C<E: 8 <> <@8 98 :5;8 F<E@5 5; 5 75 J766 :8F<?8 7@ 5;8 C<E: 8 <> 5;8 @8L5 M EF7@A 5; 5 5;8 B8G5; <> >885 7 F 7@5 7@8B @B 5;8 : 58 <> F<57<@ 7 5;8 F8N J766 @<5 =8 <@8 7@C; =E5 J766 =8 <F85;7@A 68 =8C E 8 5;8 G<J8:8F G6<98B J766 =8 B7 5:7=E58B <?8: A:8 58: :8 $ 5 B<8 @<50 ;<J8?8:0 ><66<J 5; 5 5;8 $2 <> 5;8 F 558: J;7C; 7 :8F<?8B J766 =8 68 @B 68 >:<F 5;8 ?8:9 =8A7@@7@A$

;8:8 C @@<50 ;<J8?8:0=8 'B<E=5=E5'5; 50 >58:' 'C8:5 7@'6 G 8 <>'57F80 5;8 $2 '<>'5;8 F 558:':8F<?8B=8C<F8'68 ' @B'68 $

4<:'5;8 8 :8 <@ $;8':<CI'5; 5'7':8F<?8B'7'5 I8@ J 9'=9 >:7C57<@$ >'5J<'I7@B $;8'>7: 50 <>'5;8'><:87A@' F 558:'7F=8BB8B 7@'5;8'=<55<F'<>'5;8 A6 C78:'M<:':<667@A E@B8:@8 5;'75N A 7@ 5'5;8 =8B :<CI0 J;7C;' ><:87A@' F 558:'75' ;' =88@' 6:8 B9 5 58B'Md N' 7' B8:7?8B' >:<F'5J<' <E:C8 K?7S$ >:<F'5;8' :<CI ;8B'75 86>0 @B' >:<F'F 8'J;7C;' ;?8'> 668@'<@'5<'5;8' E:> C8'<>'5;8'A6 C78:0 @B' >58:J :B'J<:I8B'5;87:' J 9'B<J@$

5'7'<=?7<E 0 '5;8' :<CI'J;7C;' :8'=87@A'<G8: 58B'EG<@'=9 5;8'A6 C78:'=8C<F8' F<:8' @B' F<:8' F<<5;0 5; 5'5;8' EGG69'>:<F' 5;8'>7: 5'<>'5;8 8' <E:C8'FE 5'RC<@ 5 @569'B7F7@7 ;$ 5'7'8HE 669' C8:5 7@'5; 5' J;8@'5;8':<CI=8B' ;'6< 5'F @9'<>'75' G8:7578 0 @B' 5;8'A6 C78:K <'5< G8 IK>75'F<:8' C6< 869'5<'750 5;8' F 558:'J;7C;' > 66'>:<F' =<?8' ;'A:8 58:'B7> CE659'7@'A8557@A'=85J88@'5;8'7C8' @B'5;8':<CI=8B$ 8:8' :8'5J<'J 9'<>' CC<E@57@A'><:'5;8'>C5 5; 5' 5:7 57<@'':8: :8'<:'J @57@A'EG<@' $' ' @B'75'J766' @<J'=8'G8:C87?8B'J;9'75'J ' 7B'Md N'5; 5' 5:7 57<@'Z7@B7C 58' 'C<FG : 57?869'8 :69' @B'C< : 8' 5 A8'<>'A6 C78:' C57<@$3

;8:8' :8F 7@'5<'=8' C<@ 7B8:8B' 5;8'>:7C57<@' <>'5;8'7C8'75 86>' A 7@ 5'5;8' :<CI=8B$;70 5<<0 FE 5' B7F7@7 ;' '5;8' E:> C8' <?8:'J;7C;'5;8'A6 C78:'G 8'=8C<F8' F<<5;8:' @B'>6 558:$;8' F<:8'5;<:<EA;69'G : 6686'5;8'=<55<F'<>'5;8'A6 C78:' @B'5;8'=8BD :<CI' :8'5<'8 C;'<5;8:0 5;8'68 '>:7C57<@'J766'5;8:8'=80 @B'5;8'68 ' =: 7<@$

;8:8'7'5;8:8><:8'A<<B' :8 <@'5<'=8678?8'5; 5'@<5' <@69'7'5;8' B8G5;' <>':<CI' :8F<?8B'>:<F' @9'A7?8@'G6 C8'68 ' @B'68 '98 :' =9'98 :0=E5'5; 5'5;8'5<5 6 F<E@5'<>'F 558:':8F<?8B'=9'5;8'A6 C78:' C<@ 5 @569'B7F7@7 ;8 $ .E 5' ' F<<5;7@A G6 @80 5; 5'7' 85'>7@80 J7@'5 I8' ; ?7@A' >58:' ; ?7@A'>:<F' 'G6 @I'M8 C;' ; ?7@A'=87@A' 5;7@@8:'5; @'5;8'6 5N0 @B' 5'68@A5;'A67B8'<?8:'5;8' J<<B'J75;<E5' G:<BEC7@A' @9'8>>8C5'8LC8G5' 'I7@B'<>':EB8'G<67 ;7@A'0 <' 'A6 C78:0 G 7@A'<?8:':<CI0 5 I8' ; ?7@A' >58:' ; ?7@A'M7@'5;8'><:F'<>' @B' <:' FEBN0 @B' 5'68@A5;'A67B8'<@0 @B'GE5'5;8'>7@7 ;7@A'5<EC;80=9

6# / # $% #( ) ! ' $%' $ ' ($ ' " +' & ! #(' ! ' $%' <

G<67 ;7@A0 5< 5 ; 8 E:> C8 ' J ;7C ;' 75 ; B >< : F 8 : 69 G : 8G :8B =9 : G7@A
@B >767@A$

;8 C 6CE6 57<@ ' <> 5 ; 8 8>>8C5 j' 5 ; 5 ; ?8 =88@ G : <BEC8B =9
A6 C78 :' A8@C90 J ;7C ;' :8 = 8B <@ 5 ; 8 E F G57<@ 5 ; 5 5 ; 8 F <E@5
<> F 58 :7 6 :8 F <?8B 7 ' 5 ; 8 F 8 >: < F' <@8 98 :' 5< @<5 ; 8 :0 :8
@8C8 :769 > 66 C7<E $;8 :8 :8 @<50 F <: 8 <?8 :0 @9 B 5 ' >: < F'
J ;7C ;' 5 ; 8 F <E@5 <> J <: I' C @ =8 C 6CE6 58B 5 ; 5 A6 C78 : ' G8 :>< : F'
7@ @9 A7?8@ 57 F 8 0 =E5 5 ; 8 :8 :8 7@B7C 57<@ ' 7@ 5 ; 5 B7 : 8C57<@0 @B0
< > :' ' 5 ; 89 A<0 5 ; 89 88 F' 5< G<7@5 5< 5 ; 8 C<@C6E 7<@ 5 ; 5 5 ; 8
8>>8C5 ' J ;7C ;' 5 ; 89 ; ?8 G : <BEC8B0 7@ 5 ; 8 J 9 <> F I7@A ; <66< J 0
:8 F EC ;' 68 ' 7 F G<:5 @5 5 ; @ F @9 EGG< 8$

$ > ' J8 :8 I8B J ; 85 ; 8 :' 5 ; 8 C57<@ <> A6 C78 :' EG<@ : <C I '
; <E6B =8 C<@ 7B8 :8B ' C ; 78>69 B8 5 : EC57?8 <:' C<@ 8 :? 57?80 ' ; <E6B
@ J8 :0 J75 ; <E5 ; 8 75 57<@0 G : 7@C7G 669 ' C<@ 8 :? 57?8$ 5 7 ' B8D
5 : EC57?80 C8 :5 7@690 5< ' 67 F 758B 8L58@50 =E50 67 I8 ' F <@ J ; <
B :8 8 ' ' C<6E F @' 5 ; 5 7 ' 5< =8 >58 : J : B ' G<67 ;8B0 5 ; 8 A6 C78 :'
:8 F <?8 ' ' F 66 G<:57<@ <> 5 ; 8 5<@8 EG<@ J ;7C ;' 75 ?(<: I 0 7@ <: B8 :'
5 ; 5 5 ; 8 :8 5 F 9 =8 F<:8 8>>8C5E 669 G : 8 8 : ?8B$ 9 <=6758 : 57@A'
5 ; 8 7@8HE 67578 ' <> 5 ; 8 :<C I0 @B0 C<@ 8HE8@5690 =9 :8BEC7@A 5 ; 8
:8 ' <> 5 ; 8 E:> C8 ' J ;7C ;' :8 8LG< 8B 5< 5 ; 8 5F< G ; 8 :8 5< '
F7@7 F E F0 5 ; 8 A6 C78 :0 J ; 8@ 75 :857 :8 0 68 ?8 ' 5 ; 8 :<C I' 7@ 5 ; 8 =8 5
G< 7=68 C<@B757<@ 5< J75 ; 5 @B 5 ; 8 55 C I ' <> ; 8 50 C<6B0 @B
J 58 :$

5 ; ' =88@ G<7@58B <E50 57 F 8 ' J 75 ; <E5 @E F =8 :' M8?8@ =9 5 ; < 8
J ; < :8 7@ 5 ; 8 ; =75 <> CCE 7@A A6 C78 : ' <> 5 ; 8 F < 5 >:7A ; 5>E6
B8 5 : EC57?8@8 N0 5 ; 5 5 ; 8 G<67 ;8B E:> C8 ' J ;7C ;' 5 ; 89 68 ?8
=8 ; 7@B 5 ; 8 F' 88 F' 5< =8 7 F G8 :7 ; =68$ 66 J ; < I@< J' :8 A:88B
5 ; 5 C8@5E :78 0 @ 90 $ 2 ' <> 98 : 0 G ' J 90 @B 5766 5 ; 8
$ ' 2 E ' : 85 7@ 5 ; 87 :' >< : F$

@' :8A :B 5< 5 ; 8 C57<@ <> 5 ; 8 A6 C78 :0 J ; 8@ 75 7 ' 7@ >E66 67>8 @B
C57?759 0 66 :8 @<5 < A:88B$ E5 J ; 8@ <@8 >7@B ' 8?7B8@C8 5 ; 5
A6 C78 : ' J ;7C ;0 8L7 58B 5 ; :<EA ;' ? 5 G8 :7<B ' <> 57 F 8 B7B @<5 ; 7@A
F<:8 5 ; @ 2 ' G : 8 8L7 57@A J8 5 ; 8 :8B >< : F 0 ' :<EA ;' @B

E@8?8@ E:> C8 @ @B B7B @<5 8?8@ 8@57:869 B8 5:<9 5 ; 8 B8 5:EC57?8@ *J<: I <>5 ; 8 <6B8: @B A:8 58: G<J8: [J ; 768 5 ; < 8 G<J8: J8:8 5 5 ; 8 F8 57F8 '' 7@5< 5 ; 8 :<C I ' J ; 7C ; ' 5 ; 8 A6 C78: ' J8:8 @<5 C<?8:7@A0 J8:8 ' :8BEC7@A 5 ; 8 :8 ' <> 8LG< 8B E:> C8 @ ; E50 <@ 5 ; 8 C<@5: :90 J8:8 C<@57@E 669 7@C:8 7@A 5 ; 8F @B J8:8 ; E: ; @A B<J@ ? 5 F 8 @ <> J ; 7C ; ' ; E5 ' F 66 G<:57<@ >866 <@ 5< 5 ; 8 A6 C78: ' M=E5 J ; 7C ; ' F 66 G<:57<@ G:<= =69 8HE 668B <: 8LC88B8B 7@ ; E6I 66 5 ; 5 5 ; 8 A6 C78: ' J8:8 :8F<?7@AN0 5 ; 8 C<@C6E 7<@ C @ ; :C!69 ; 8 ?<7B8B 5 ; 5 A6 C78: @ 7@ 5 ; 87: 67>8 ' J866 ' >58: 5 ; 87: B8 5 ; 875 ; 8: C<@ 7B8:8B =9 5 ; 8F 86?8 ' <: 7@ C<FG :7 <@ J75 ; ' <5 ; 8: G<J8: @ ; <E6B ; 8 :8A :B8B ' 8F 7@8@569 C<@ 8:? 57?8 7@ 5 ; 87: C5 ' @B 7@ 5 ; 87: 7@58@57<@ $

Y((8 >7@7 ; 8B EG 5 ; 8 B <> EAE 5 J75 ; ' J 6I ' <?8: 5 ; 8 47@B868@ A6 C78: @B :85E:@8B 5< V8:F 55 5 '6 58: ; <E: 5 ; @ J8 7@58@B8B =<5 ; '?8:9 688G9$; 7 '7 '@<58J<:5 ; 9 <@69 <@ CC<E@5 <>5 ; 5 J ; 7C ; ' ><66<J8B$) 8 ; B 5< C:< ' 5 ; 8 <6 B8 (6G8 / 7@8 <@ 5 ; 8 @8L5 B 9 @B @ 8 :69 5 :5 J ' B8 7: =68$ <@ 78E: 8768:0 8LC8668@5 F @0 I@<J7@A 5 ; 7 @ C 668B E ; 7F 86>0 @B J ; 8@ ; 8 C F8 5< F9 B<<:0 ' @ J8:8B0 Z 66 :7A ; 50 8768:0 ' J766 A85 EG03 @B 7F F8B7 5869 5E:@8B <?8: 5< 5 ; 8 <5 ; 8: 7B80 97@A 5< F9 86>0 Z 47: 5 <> 660 58@ F7@E58 ' F<:8 688G$3 E5 8768: J 758B @B 67 58@8B0 @B0 E G8C57@A 5 ; 8 C 80 I@<CI8B A 7@$ Z 87 ') ; 9FG8:0 ; ?8 9<E A<5 ' 67A ; 5 ^3) 75 ; <E5 5 ; 7@I7@A J ; 5 5 ; 8 C<@ 8HE8@C8 ' F7A ; 5 =80 ' @ J8:8B0 Y <03 @B 5 ; 8@ 5 ; 8 J<:5 ; 9 F @ C5E 669 ><:C8B 5 ; 8 6<CI ' <>> ; 7 ' <J@ B<<: 5< A7?8 F8 <@8$ 9 7F76 : @B 8HE 669 >:78@B69 @B B7 7@58D :8 58B C5 $ <@ 78E: 8768: ; ' CHE7:8B ; 7 ' 8@?7 =68 :8GE5 57<@$ 5 2 $ $ J8 68>5 ; 7 ' <@58 < ' <586 @B J8:8 <<@ GE ; 7@A <E: J 9 5 ; :<EA ; 5 ; 8 5 ; 7CI85 ' <> A:89 6B8: 5 ; 5 I7:5 5 ; 8 G 5 ; ' EG 5 ; 8 8LHE7 758 675568 ? 6689 J ; 7C ; ' 68 B ' 5< 5 ; 8 VRFE55 ' A685 C ; 8:$P

%<5 ; 7@A C @ 88F <: ; 8 F<:8 7@ CC8 7=68 5 ; @ 5 ; 8 558: ; <:@

P ; 8 G 5 ; ' <@ 5 ; 8 :7A ; 5 ; @ I ' M <E5 ; 8:@ 7B8N <> 5 ; 8 ? 6689 7 ' FEC ; ' F<:8 G7CD 5E:8 HE8 5 ; @ 5 ; 5 <@ 5 ; ' <5 ; 8: 7B8$ * 4<: <E: :<E580 88 5 ; 8 F G ' <> 5 ; 8 ? 6689 <> V8:F 55 @B 5 ; 8 ? 6689 <> (6G8667@8$

;8 B8 <6 58 <E5 7B8 G7@8 ' <>5;8 VR@7E55 ><:8 5 5:7GG8B <>5;87:' ; :I @B =6 @C;8B=9'5;8 J8 5;8:0 :8 '>75 ><:8A:<E@B'5< ' C8@8'5; 5 C @' ; :B69'=8 E:G 8B 7@' <68F@' A: @B8E:$ 5'7' ' E=!8C5 J<:5;9'<>5;8 G8@C76 <>' A:8 5 G 7 58:0 @B <@8 J;7C;' J<E6B'5 L'5;8 G<J8:' <>5;8 ?8:9'A:8 58 5$

7A;8:'EG 5;8 A6 C78:'5;8 F<E@5 7@'7'68 ' ? A8'7@' GG8 :D @C80 =E5'75'7'@<5'68 '7FG: C57C =68'0 @B0 5;:88 ;<E:'6 58:0 J;8@ J8 ::7?8B' 5 5;8'7 6 @B'<>' :<CI0 C 668B'5;8 5<CI!8 MJ C;' F :I' 5;8 8@B' <>5;8 VRF E55A685 C;8:' G:<G8:0 @B J;7C;' 8G : 58'75' ;7A;8:'>88B8:0 5;8 5<CIA685 C;8:0>:<F'75'6<J8:'=E5 A:8 58:'<@80 5;8 78>8@F 558@N0 ::86 ;7F 86>0 <@8 <>5;8 68 5 B8F<@ 5: 57?8 <>F8@0 C<E6B'@<5 :8>: 7@'>:<F' 8LG:8 7@A' J<@B8:' 5 5;8 588G@8 '<>75'> C8 0 @B 5 5;8 EB C759'5; 5 ; B G:<FG58B'E'5< C FG EG<@5;8 <E5; J8 5 :7BA8 0 5;8 G:<>768 <>J;7C;'7' 88@ ?8:9'J866>:<F5;8 5<CI!8$P ::86 5;8@ J'5;8 @<:5;' @B @<:5; J8 5 7B8'<>5;8F<E@5 7@' ><:'5;8 >7: 5 57F80 @B J 'F<:8 >7:F69 G8: E B8B'5; @8?8:0 5; 5 @' C8@5 J 'G< 7=68 '>:<F'5;8 B7:8C57<@'<> :876$

;:88 98 :'>58:J :B''J '5: ?8: 7@A'5;8 F8 G<5 J75;'5;8 AE7B8'4: @S 78@8:0 J;8@ 66 5<C8 'GE>'<>JB@B=:<EA;5 5< E''?8:9' = B F 866 @B0 <@'6<<I7@A' =<E50 J8 B7 C<?8:8B' B8 B C; F<7';6> J 9'EG'5;8 <E5;8:@'C67>5'<>'5;8 5<CI!8$) 8 C6 FD =8:8B'EG0 @B><E@B'5; 5 75'; B'=88@'I7668B' =9' 'F< 5'E@C<F F<@ @B 8L5: <:B7@ :9 CC7B8@5$ 5'; B 67GG8B' <@'5;8 EGG8:'<CI 0 ; B:<668B'<?8:' @B<?8:'B<J@' '6<G8"<>B8=:7 0 J75;<E5'=87@A' =68 5<:8A 7@'75'>885 0 ; B'> 668@'<?8:' '=5568'G 5C;'<>:<CI'5; 5'G:<D !8C58B' 5;:<EA;'5;8 B8=:7 0 @B ; B'C EA;5 5;8 G<7@5'<> =<5;

P :<>8 <:'UE I7@R'?78J'<>'Z'5678 8:?7@'>:<F'5;8@<:5; J8 5'3'> %"#()' ' ?<6$ 7?$N'7'5 I8@'>:<F'5;8 5<CI!8$;8 <6 BE 7<@'7'5;8'675568'B8G:8 7<@'<@'5;8 :7BA80 C6< 8 5<'5;8 F 7A7@'<>'5;8 8@A: ?7@A0'<@'5;8':7A;5' ; @B 7B8'0 5;8'5;7:B'58@5' G6 5><:F'J '><:F8B 5'5;8'><<5'<>'5;8 G8:G8@B7CE6 :'C67>>0'<@'5;8':7BA80 8L C569'<@8' 5;7:B'J 9'=85J88@'5;8 <6 BE 7<@' @B'5;8 EF F75$;8' 5568F8@58B'G<:57<@'<>' 5;8':7BA80 '675568';7A;8:'EG0 7'C 668B'5;8 Z * '"!' C'A @B'5;8'@8 :69';<:7S<@5 6 G<:57<@'<>'5;8':7BA8 =<?8'75'7'Z'5;8 ;<E6B8:$'3 5'7';7A;'58 57F<@9'5<'5;8 CCE: C9 <>' :$ E I7@R'JR<:I'5; 5'75'7'G< 7=68'5<G<7@5'<E5'F7@E57 ' EC;' '5;8 8 EG<@ @ 8@A: ?7@A'5; 5 J 'GE=67 ;8B'><E:588@'98 :' A<$

;<:@ ' <@' ' 57@9' 68BA8 @<5' @' 7@C;' =:< B$ 5' ; B' !E 5' =88@' =68' 5< 5<EC67 5;8' B8=:7 J;8:8' 75' 68B' J 9' B<J@' >:<F' 5;8' :<CI @' @B' ; B' G J8B' @B' C: 5C;8B' E@576' 75' C<E6B' @< 6<@A8:' 5<EC;$ 5' ; B' 8?7B8@569' =88@' 5 :?8B' 5< B8 5;@' @B' J8' ><E@B' 5;8' G<<:' =8 5' 6F< 5' J7@A7@A' 7@' 5;8' 7:@ J75;' 75 ' ;8 B' 5;:<J@' = CI' @B' 5<@A@8' G:<5:EBD 7@A@ 6<<I7@A' 5< 5;8' I9' ' 7>' 7FG6<:7@A' ;86G$

) 8' ; B' @< EC;' 8LC758F8@5' ' 5;7 ' 7@' @ @B' C:< 8B' 5;7 ' 8 9' G ' 5< 5;8' C; 685 ' <>' :8: 98@' 7@' ' ?8:9' 687 E:869' > ;7<@$' :<F' 5;8' EF F75' 5< :8: 98@' 685' E ' B8 C8@B' 7@' <@8' 58G$;8' J 9' ; ' =88@' B8 C:7=8B' =8><:8' @ @B' 5;< 8' J;< J7 ;' ><:' 7@><:F D 57<@' =<E5' 75' ;<E6B' C<@ E65' 5;8' B8 C:7G57<@' <>' :$. C<F;@ 5;8' B7 C<?8:8:' <>' 5;8' G $P' %<:' @88B' J8' 5<G' 5' :8: 98@@ 8LC8G5' 5< :8F :I' 5; 5' 5;8' <J@8:' <>' 5;8' C; 685 ' MJ;< 7 ' E E 669' 5 I8@' ><:' ' C<F F<@' ;8:B F @N FE 5' @<5' =8' !EBA8B' =9' GG8 : @C8 $ 8' 7 ' ' F @' <>' E= 5 @C8' @ ;8' ; ' F @9' >6<CI ' @B' ;8:B ' @ @B' 65;<EA;@ J;8@' GG:< C;8B' G<U5869@ 7 ' C<E:58<E @ ;8' C @' M @B' G:<= =69' J7/N C5' ' 5;8' ' <>' :8: 98@@ 7>' ;7 ' G< 757<@' 7 ' ' :8C<A@7 8B@ @B' J75;' 66' 5;8' 7FG<:5 @C8' <>' ' F @' J;< G 9 ' 5 L8 ' 5< 5;8' 8L58@5' <>' ' >: @C ' G8:' @@EF' 5< ;7 ' A<?8:@F8@5$

;8' ;766 5<G ' J8:8' C6<EB8B' J;8@' J8' :< 8' >:<F' <E:' ; 9' <@' 5;8' 5;' <>' EAE 5$) 8' B8C7B8B' @<5' 5< C<@57@E8' 5;8' 5<E:' <>' <E:' F<E@5 7@' 7F F8B7 5869@ @B' :85E:@8B' <?8:' <E:' 5: CI' <>' 5;8' G:8

P' ' ' ' K 8C<@B' 8:78 $

;8' E7 F75' <>' 5;8' <6' B8' (6G8667@8' 7 ' =<E5' 0 ' >885' =<?8' 5;8' 8 $;8' G ' 7 ' 5;8' 8 78 5' <@8' 7@' 5;8@ 6G ' <>' 5;7 ' ;87A;5@ @B' M7>' 5;8' =8 5' :<E58' 7 ' ><66<J8BN' 75' F 9' =8' C:< 8B' BE:7@A' >7@8' J8 5;8:@ @B' E@B8:' > ?<E: =68' C7:CE F 5 @C8 @ J75;<E5' CE557@A' ' 7@A68' 58G$ 5' F 9' =8' BB8B@ 5;5;8' F8' 57F8@ 5;5 7>' <@8' B<8 ' @<5' 5 I8' 5;8' =8 5' :<E58@ 5;8' G ' F 9' =8C<F8' <@8' <>' >7: 5 : 58' B7>>7CE659$ EC;' 57F8' @B' 5:<E=68' J7 ' =8' ?8B' =9' 5:7C569' B;8:7@A' 5< 5;8' 68>5' = @I' M8 58:@' 7B8N' <>' 5;8' V :B< @A6 C78:$:$. C<F;' ><66<J8B' 5;8' :7A;5' = @I$

;8:8' 7 ' ' ?8:9' >7@8' ?78J' >:<F' 5;8' G<7@5' 5; 5' 7 ' 75E 58B' =<E5' 5J< 5;7:B '' <>' ' F768' $ =9' $ <>' 5;8' EF F75' <>' 5;8' <6$;7 ' G<7@5' MF :I8B' ' F85:8 'h' Q02 ' >885@ <@' 5;8' F G' <>' 5;8' (6689' <>' V8: F 55N' ; ' @<' @ F8$ 5' 7 ' C<@@8C58B' J75;' 5;8' <6 =9' @<J C<?8:8B' A6 C78:' 5' ' ?8:9' F<B8: 58' @A68@ @B' >:<F' 75' <@8' 6<<I ' J866 <?8:' 5;8' 858' 6 @C;8@ J;7C;' 7 ' Q ' >885' 68 ' 7@' 868? 57<@$ 5' J ' C8@B8B' =9' 5;8' E5;<:' 7@' $

8B7@A B 9 5< 5;8 ;7A;8 5 C;;685 @ 5;8 68>5 = @I <> 5;8 ? 66890P J75;5;8 7@58@57<@ <> 55 CI7@A 5;8 '8@5 BR':7@ <@ 5;8 @8L5 F<:@7@A$) 8 J8:8 7@58:8 58B F'5;7' EF F750 F<:8 <@ CC<E@5 <> 5;8 8LC8668@5 ?78J' J;7C;' 75 C<F F @B8B <> 5;8 <E5; J8 5 :7BA8 @B 5;8 58:F7@ 6 G8 I <> 5;8 558:;<:@0 5; @ >:<F' @9 <5;8:' :8 <@$

;8 '8@5 BR :7@ ; B @<5=88@ C8@B8B 5 5;7'57F 80 @B J8']
; B B7?8:A8B >:<F <E:':<E58 <@ 5;8 25;0 @B ; B C: F=68B <F8 B7 5 @C8 EG 5;8 = 8 <> <@5 :E680 5< 88 ;<J' > :' 75' <E5;D J8 58:@ 6<G8'J8:8 76 =68$) 8 J8:8 B7?7B8B 7@ <G7@7<@ '5< 5;8 =8 5 J 9 <> GG:< C;7@A 5;8 G8 I$ ::860 5:E8 5< ;7'; =75 <> 57CI7@A 5< :<CI'7@ G:8>8:8@C8 5< 7C80 C<E@ 8668B C8@B7@A =9 5;8 6<@A =E55:8 '<>5;8 858 B8 866 '7'MJ;7C;'B8 C8@B'5<J :B' 5;8 J8 50 @B ><:F'5;8 <E5;8:@ =<E@B :9 <>5;8 6 5 A6 C78:'5; 5 > 66'7@5<5;8 &:7 C78:' B8 V :B8 @N0 @B5;8@C8 5: ?8: 7@A5;8 ;8 B' <> /'5;8 5:7=E5 :78' <>5;8 V :B8 @5<5;8 J8 58:@ @B :<CI9 :7BA8 <>5;8 '8@5$ 0 <@5;8 <5;8:' ; @B0 G:<G< 8B 5< ><66<J'5;8 &6 C78:' B8 V :B8 @75 86>5;:<EA;<E5 75'8@57:8 68@A5;0 @B >:<F 5;8 G6 58 E 5 75' ;8 B MJ;8:8 F9 G:<G< 8B :<E58 J<E6B :<' 7:86R N 5< F I8 B7:8C569 5<J :B' 5;8 EF F750 EG 5;8 @<J' C<?8:8B A6 C78:' 6<G80 7@ 58 B <>5 =9 5;8 J8 58:@ :7BA8$;8 ;E@C;= CI0 J;< J ' 0CC<FG @97@A E' <@ 5;8 8 8LCE:7<@ 0 B8C6 :8B 7@ > ?<E:' <> ::86R' :<E580 @B 75 J ' CC<:B7@A69 B<G58B$

;8 >7:5 G :5 <>5;8 G:<A: F F8 J ' ECC8 >E669 8L8CE58B 0 @B 5 $ ' $ $ <@5;8 5;' <> EAE 50 J8 J8:8 7557@A 5:7B8 5;8 J8 58:@ :7BA80 5 ';87A;5 <> =<E5 Q0 '>8850 6<<I7@A B<J@ EG<@5;8 78>8@F 558@ A6 C78:$ < 66 GG8 : @C8 @<5;8:' ;<E:' J<E6B G6 C8 E' <@5;8 EF F750 =E5 7@ @<5;8:' ;<E:' J8 ><E@B

P 88 F G <>5;8 (6689 <> (6G8667@8$;8 C; 685 7 ' F :I8B Z 6 '?7866 8$3
;8 :8 B8:' J766 G:<; ;69 @<57C8 5;8 B7 C:8G @C78 '=85J88@ 5;7 'G :5 <>5;8 F G <> 5;8 (6689 <> V8:F 55 @B 5; 5 <> 5;8 (6689 <> (6G8667@8$;8 6 558:' <@8 7' C<::8C5$;8 ><:F8:' 7' >58:' 5;8 J7 ' &<?8:@F8@5 F G J;7C;' 7' 8L5:8F869 CCE: 58 <@5;8 J7 ' 7B8 <>5;8 >:<@578:'67@80 ;E5 B<8 '@<5 G:858@B 5< =8 < <@5;8 5 67 @ 7B8$

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' >< <J8B F9 68 B8:0 J;< 7B @<5 ' J<:B0 @B B7B @<5 :8=86 E@5 ' J8 C F8 5< ' G6 C8 J;8:8 ' =6<CI' ; B 5< =8 E:F<7F58B J;7C;' 6 9 G<7 8B C:< ' 5;8 :7BA8$ ::86 C<E6B @<5 C67F=' 75 J75;<E5 7 5 @C80 <:' B? @C8 =89<@B 75 E@5 ' '!<7@8B;7F' =<?8 0 @B ' ;8 58GG8B <>>F9= CI' <@ 5< 750 ' >865 75 HE7?8:' @B =8 :' B<J@EG<@ F8$ ' B<E=58B 5;8 G< 7=76759 <> @<5;8:' F @ 5 @B7@A EG<@ 75 J75;<E5 =:7@A7@A 75 B<J@$;8@ ' :8=8668B$;8:8 J ' @< ;<@<E:' 5< =8 A 7@8B =9 G8: 8?8:7@A0 <:' B7 ;<@<E:' 7@ 5E:@7@A >:<F ' G6 C8 J;7C;' J ' B @A8:<E ' <@ CC<E@5 <> 75 ' 8LC8 7?8 B7>>7CE659$ < J8 :85E:@8B 5< :8: 98@0 ><:' 5;8:8 J ' 5< 675568 57F8 5< 66<J' E ' 5< :8 C8@B =9 5;8 <5;8:' :<E580 J;7C;' J ' E= 8D HE8@569 ;<J@ 5< =8 5;8 :7A;5 J 9 EG 5;8 F<E@5 7@$

4<E:' B 9 ' >58:J :B ' ' G :59 <> @A67 ;F8@ M7@C6EB7@A F9 >:78@B 0) $ $ 660 : @><:B &:<?80 @B 8A7@ 6B CB<@ 6BN0 ::7?8B 7@ 5;8 (6G8 7@80 @B ME@ J :8 <> <E:' 558FG5N <@ 5;8 Q5;0 E@B8:' 5;8 I76>E6 AE7B @C8 <> 86C;7<:' @B8:8AA0 F B8 5;8 >7: 5 C8@5 <> 5;8 ' 8@5 BR :7@ =9 5;8 :<E580 J;7C;' ' ; B G:<G< 8B$;7 ' 7 ' 5;8 <@69 F<E@5 7@ J;7C;' ' ; ?8 8 98B 5< C8@B0 5; 5

CE5 5 :8760 5 5678 = CI <> <@5 77HE8:<0 =9 675568 G 6<C 669 I@<J@ 5;8 <6 B8 48@85:8$:8!<7@8B ::86 5;8 F8 8?8@7@A 5 (6 <@:@ @C;80 @B JB 5 :58B >:<F 5; 5 G6 C8 5 675568 =8><:8 $ 2 <@5;8 5;0 5< 55 CI 5;8 <E:@ 67:7$

89@85 J 68>5 =86;@B ><: 5; 5 B 90 @B F< 5 E@J 7667@A69 B7B 5;8 ;E@C;= CI G :5 >:<F E 0 @B =8AA8B ; :B 5< ;8 66<J8B 5< C<F8$ Z 9 F8 @<56<7@A0 <@69 685 F8 A< J75;' 9<E03 Y) ; 66 J @5 =E5 675568 =:8 B @B C;88 80 @B <>5; 5 J<@R5 8 5 FEC;'03 Z J<E6B FEC;': 5;8:A< J75;' 9<E 5; @ C ::95;7@A B<J@ 5;8 ? 6689$3 EC;'J8:8 ;7 :AEF8@5 0 @B J :8 669 <::95; 5 5;8 : G7B759 <> <E: F<?8F8@5 <=67A8B E 5< B8 8:5 5;8 A<<B 675568 F @$

::86 68B <?8:'5;8 F8 B<J <@5;8 <E5;' @B 8 5 <> 5;8 =6E>> EG<@ J;7C;'5;8 ?766 A8 <> (6 <E:@ @C;8 7 =E765 @B 5;8@ =9 S7A S A G 5;' 5;:<EA;' 6<@A @B 588G ><:8 5 F I7@A F @9 ;<:5 CE5 0 J;7C;' ;<J8B 678 ; B 5;<:<EA;' I@<J68BA8 <> 5;8 A:<E@B$ >58:' J8 C F8 A 7@ 7@5< B 967A;5 <E:' :<E58 5<<I' E EG <@8 <> 5;< 8 675568 C<@C8 68B0 6 58: 6 ? 6689 J;7C;' :8 < @EF8:<E <@5;8 6<G8 =<E@B7@A5;8 (6 <E:@ @C;80

;7 ? 6689 5;8 <F=8 B8 8@876 ; A8@8: 6 8 58:69 5:8@B @B C<@5 7@ =E5 <@8 F 66 C6E 58:' <> ;<E 8 M 8@8BN$;8 <@: @ 67@7 75E 58B 5 5;8 ;8 B <> 5;8 <F=8 @B @8 :69 BE8 8 5 <> 5;8 ?766 A8 <> (6 <E:@ @C;80 =E5 >:<F 5; 5 G6 C8 @< G :5 <> 5;8 F<E@5 7@ 7 ?7 7=68$ >58:' 8@876 7 G 8B 75 C<F8 7@5< ?78J 0 :7 7@A =<?8 C7:HE8 <> C67>> M 5:8 I8B =9 8?8: 6 >7@8 J 58:> 66 N 5 5;8 8@B <> 5;8 <F=80P < ?<7B 5;8 8 C67>> 5;8 G 5;' =8@B <F8J; 5 5< 5;8 <E5;0 I88G7@A5;:<EA;<E5 5< 5;8 68>5 = @I <> 5;8 ? 6689 @B 5 =<E5 >885 =<?8 (6 <E:@ @C;80 @B >885 =<?8 8@876 @B F768 <:' < 5< 75 8 50 ::7?8 5 5;8 = 8 <> <F8 F<: 7@8$ 0 J;7C;' :8 :8F :I =69 6 :A8 C<@ 7B8:7@A5;8 B7F8@D 7<@ <> 5;8 A6 C78: J;7C;' >:<:F8B 5;8F$;B : @A8 EG<@ 5;8 J8 58:@ 7B8 <> 5;8 (6 <E:@ @C;8 :8 88@ 5< A:8 5 B? @5 A8 >:<F 5;7 G<50 =E5 ;8:8 5;8 G 5;' 8@B @B 5;8 J 9 588G8@ $

);8@ J8 ::7?8B 5 5;8 8 F<: 7@8 0 J8 ; B ' C;<7C8 <> 5J<

a cleverness which was almost as far removed from my awkwardness as his own efforts were from those of the chamois. A few easy steps then placed us on the highest point. It had not been ascended before, and we commemorated the event by building a huge cairn, which was seen for many a mile, and would have lasted for many a year, had it not been thrown down by the orders of Canon Carrel, on account of its interrupting the sweep of a camera which he took to the lower summit in 1868, in order to photograph the panorama. According to that well-known mountaineer, the summit of the Grand Tournalin is 6100 feet above the village of Val Tournanche, and 11,155 feet above the sea. Its ascent (including halts) occupied us only four hours.

CARREL LOWERED ME DOWN.

I recommend the ascent of the Tournalin to any person who has a day to spare in the Val Tournanche. It should be remembered, however (if its ascent is made for the sake of the view), that these southern Pennine Alps seldom remain unclouded after mid-day, and, indeed, frequently not later than 10 or 11 A.M. Towards sunset the equilibrium of the atmosphere is restored, and the clouds very commonly disappear.

I advise the ascent of this mountain not on account of its height, or from its accessibility or inaccessibility, but simply for the wide and splendid view which may be seen from its summit. Its position is superb, and the list of the peaks which can be seen from it includes almost the whole of the principal mountains of the Cottian, Dauphiné, Graian, Pennine, and Oberland groups. The view has, in the highest perfection, those elements of picturesque-

@8 ' J677C67 :8 J @57@A' 7@' 5;8' GE:869' G @<: F7C' ?78J ' <>' ;7A;8:' EF F75 $;8:8 :8' 5;:88' G:7@C7G 6' 8C57<@ 0' 8 C;' J75;' ' C8@5: 6' <:' B<F7@ 57@A' G<7@50' 5<' J ;7C;' 5;8' 898' 7 ' @ 5E: 669' B: J@$ 66' 5;:88' 67I8' :8' G7C5E:8 ' 7@' 5;8F 86?8 '0 985' 66' :8' B7 7F76 :$ @' 5;8' <E5;0' <>58@8B' ;9' 5;8' ? G<E: ' <>' 5;8' (6' BR < 580' 8L58@B ' 5;8' 6<@A' 67@8' <>' 5;8' &: 7 @ 0' J75;' F<E@5 7@' >58:' F<E@5 7@' Q0 '>885' @B' EGJ :B ' 7@' ;87A;5$ 5' 7 ' @<5' EG<@' 5;8 80' @<=68' ' <F8' <>' 5;8F' :80' 5; 5' 5;8' 898' J766' :8 50' ;E5' EG<@' 5;8' 7 <0' > :' <>' 7@' 5;8' = CIA:<E@B$ @' 5;8' J8 5' @B' 5<J :B ' 5;8' @<:5;' 5;8' : @A8' <>' <@5' 6 @C0' @B' <F8' <>' 5;8' A:8 58 5' <>' 5;8' 8@5: 6' 8@@7@8' 6G ' M7@D C6EB7@A' 5;8' &: @B' <F=7@' @B' 5;8' ' 8@5' 6 @C;8N0' ><: F' 5;8' = CID A:<E@B0' =E5' 5;89' :8' <?8:G<J8:8B' =9' 5;8' A7R @B8E:' <>' 5;8' :7BA8 ' J;7C;' CE6F7@ 58' 7@' 5;8' 558:;<:@$ %<:' 7@' 5;8' 8 5' @B' @<:5;0' ' J;8:8' G68 @5' A: 9' 6<G8 ' 68 B' B<J@J :B ' 5<' 5;8' (6' BR 9 0' @<:' EG<@' 5;8' A6 C78: @B' @<J >786B ' =<?8' 5;8F0' @<:' EG<@' 5;8' ;877 @B' 7@' 5;8' = CIA:<E@B0' J766' 5;8' 898' 6<@A' 67@A8:0' J;8@' 7F F8B7 5869' 7@' >:<@50' 8?8: 6' F768 ' J 90' =E5' 88F7@A' C6< 8' 5' ; @B0' 5;:<J@' <E5' =9' 5;8' !NE:8' SE:8' I90' 5;8:8' :8' 5;8' A67558:7@A' C:8 5 ' <>' <@58' < $

;< 8' J;' J<E6B0' =E5' C @@<50' 5 @B' EG<@' 5;8' ;7A;8 5' 6G 0' F 9' C<@ <68' 5;8F 86?8 ' J75;' 5;8' I@<J68BA8' 5; 5' 5;89' B<' @<5' E E 669' 9786B' 5;8' ?78J ' 5; 5' F I8' 5;8' 5:<@A8 5' @B' F< 5' G8:F @8@5' 7FD G:8 7<@ $:?866<E ' <F8' <>' 5;8' G @<: F ' 88@' >:<F' 5;8' A:8 58 5' G8 I ' E@B<E=58B69' :8' 0 =E5' 5;89' :8' @8C8 :769' J75;<E5' 5;< 8' 7 <6 58B' @B' C8@5: 6' G<7@5 ' J;7C;' :8' <' ? 6E =68' G7C5<:7 669$;8' 898' :< F ' <?8:' ' FE6575EB8' <>' <=!8C5 ' M8 C;0' G8:; G 0' A: @B' 7@B7?7BE 669N0' @B0' B7 5: C58B'=9' @'8F= : : F8@5'<>':7C;8 0' J @B8: ' >:<F' <@8' 5<' @<5;8:0' 8: 7@A' =9' 5;8' C<@58FG6 57<@' <>' 5;8' @8L5' 5;8' 8>>8C5' 5; 5' J ' G:<BEC8B' =9' 5;8' 6 50' @B' J;8@' 5;< 8' ; GG9' F<F8@5 ' :8' <?8:0' J;7C;' 6J 9 ' >69' J75;' 5<' A:8 5' : G7B759' 0' 5;8' EF F75' 7 ' 68>5' J>75;' @' 7FG:8 7<@' 5; 5' 7 ' 86B<F' BE: =680' =8C E 8' 75' 7 ' E E 669' ? AE8$

%<' ?78J ' C:8 58' EC;' 6 57@A' 7FG:8 7<@ ' ' 5;< 8' J;7C;' :8' 88@' =E5' ><:' ' F<F8@50' J 8@' ' ?876' <>' F7 5' 7 ' :8@5' 7@' 5JF7@0' @B'

7@A68 G7:8 <:' B<F8 7 ' B7 C6< 8B$;8 G8 I ' J ;7C ;' :8 88@ 5 5 ;8 8 F<F8@5 ' :8 @<50 G8: ; G 0 5 ;8 A:8 58 5 <:' 5 ;8 @<=68 50 =E5 5 ;8 :8C<668C57<@ <> 5 ;8 F' <E567?8 ' 5 ;8 F8F<:9 <> @9 G @<: F7C ?78J 0 =8C E 8 5 ;8 G7C5E:80 G ;<5<A: G ;8B =9 5 ;8 898 0 ; ' 57F8 5< B:90 7@ 58 B <> =87@A =6E: :8B0 J ;768 985 J850 =9 C<@5 C5 J75 ;' <5 ;8 :' 7FD G:8 7<@ $;8 :8?8: 8 7 ' 5 ;8 C 8 J75 ;' 5 ;8 =7:BR 898 G @<: F7C ?78J ' >:<F' 5 ;8 A:8 5 G8 I 0 J ;7C ;' <F857F8 ' 8F=: C8 ' ;E@B:8B F768 ' 7@ @8 :69 8?8:9 B7:8C57<@$;8 898 07 ' C<@><E@B8B =9 5 ;8 C:<JB <> B85 76 0 @B E@ =68 5< B7 57@AE7 ;' 5 ;8 :86 57?8 7FG<:5 @C8 <> 5 ;8 <=!8C5 ' J ;7C ;' :8 88@$ 5 7 ' 6F< 5 ' B7>>7CE65 5< ><:F' ' !E 5 8 57F 58 MJ75 ;' 5 ;8 898N <> 5 ;8 :8 G8C57?8 ;87A ;5 ' <> ' @EF=8:' <> G8 I ' >:<F' ' ?8:9 ;7A ;' EF F750 ' 75 7 ' >:<F' 5 ;8 =<55<F' <> ' ? 6689$ ' 5 ;7@ I' 5 ; 5' 5 ;8 A: @B8 5 @B' 5 ;8 F< 5 57 > C5<:9 5 @BD G<7@5 ' ><:' ?78J7@A' F<E@5 7@ C8@8:9 :8' 5 ;< 8 J ;7C ;' :8 E>>7C78@569 868? 58B' 5< A7?8 ' >8867@A' <> B8G5 ;0 ' J 866 ' <>0 ;87A ;50 J ;7C ;' :8 6<>59 8@<EA ;' 5< 8L ;7=75 J7B8 @B ? :78B' ?78J 0 =E5 @<5 < ;7A ;' ' 5< 7@I' 8?8:95 ;7@A' 5< 5 ;8 68?86 <> 5 ;8 G8C5 5<:$;8 ?78J' >:<F' 5 ;8 &: @B <77:@ 67@7 ' ' > ?<E: =68 8L FG68 <> 5 ;7 ' C6 ' <> G @<: F7C ?78J $

) 8 B8 C8@B8B >:<F' 5678 EF F75 =9 5 ;8 @<:5 ;8:@ :<E580 @B ><E@B 75 5<68: =69 57>> C6 F=8:7@A ' > :' ' 5 ;8 <60 =E5 5 ;8@C80 B<J@ 5 ;8 A6 C78:0 5 ;8 J 9 J ' 5: 7A ;5><: J :B0 @B J8 !<7@8B 5 ;8 :<E58 5 I8@ <@ 5 ;8 C8@5 5 5 ;8 ><<5 <> 5 ;8 :7BA8 68 B7@A 5<J :B ' 5 ;8 8 5 @ 5 ;8 8?8@7@A' J8 :85E:@8B 5< :8B$

;8:8 7 ' @ =:EG5 :7 8 7@ 5 ;8 ? 6689 =<E5 5J< F768 ' 5< 5 ;8 @<:5 ;' 0<> 5 ;8 ?B6 A8 <> (6 <E:@ @C ;80 @B !E 5 =<?8 5 ;7 ' 58G 5 ;8 5<7 8@5 ; ' 8 58@ 75 ' J 9 7@5< 75 ' =8B @B ><:F8B @ 8L5: D <:B7@ :9C ; F0 J ;7C ;' ; ' 6<@A' =88@ I@<J@' =9 5 ;8 @ F8 &<E>>:8 B8 ' E 8: 7668 $) 8 67@A8:8B =<E5 5 ;7 ' G<5 5< 67 58@' 5< 5 ;8 5 ;E@B8:' <> 5 ;8 C<@C8 68B J 58:0 @B 5< J 5C ;' 75 ' 5E F E65E<E ' =<767@A ' 75 7 E8B >:<F' 5 ;8 A6<< F9 C68>50 "=E5 <E:' 8>><:5 ' 5< G88:' 7@5< 5 ;8 F9 58:78 ' <> 5 ;8 G6 C8 J8:8 = >>68B$ @ %<?8F=8:' 0 5 ;8 7@5:8G7B :: 86 7@BEC8B 5J< 5:E 59 C<F: B8 K5 ;8 HE7A@ SR ' <> (6 <E:@ @C ;8K 5< 6<J8:' ;7F' =9 ' :<G8 7@5< 5 ;8 C ; F' @B <?8:

5;8' C 5 : C5$;8' >8 5' :8HE7:8B' 7:<@' @8:?8 0' @B' FE C68 ' @B' 7@8J ' <>' @<' <:B7@ :9' I7@B0' @B' 75 ' G8:><: F @C8' 6<@8' 5 FG ' ::86' ' ' F @'<>'B E@568 'C<E: A8$ @8'<>'5;8' HE7A@ SR' E= 8D HE8@569' B8 C8@B8B' 7@' 5;8' F8' J 90' @B' 5;8 8' 5J<' F8@' J8:8' < 5<@7 ;8B' 5' J; 5'5;89' J0' 5; 5' 5;89'><:5; J75;' 85'5<' J<:I' J75;' ; FF8:' @B' C;7 86'5<' F I8' ' J 9'7@5<' 5;7 ' :<F @57C' AE6>$ @' ' >8J'B 9 ' 5;89'C<@ 5:EC58B' ' :<EA;' =E5' C<@?8@78@5' G6 @I'A 668:9' 7@5<' 5;8'C8@5:8'<>'5;8' ' 2&& ' 6<@A'75 ' J 66 '0' @B0' <@' G 9F8@5' <>' ' 5<66' <>' ; 6> >: @C0' @9' <@8' C @' @<'J' 8@58:' 5;8'" &<E>>:8' B8 ' E 8: 7/8 $

' C @@<50' J75;<E5' 'C<EG68'<>' 8C57<@ ' @B' 'G6 @0' A7?8' @' 8L C5' 7B8 ' 5<' 5;8' :8 B8:' <>'5;7 ' :8F :I =68' G6 C8$ 5' C<::8 G<@B ' 7@' <F8' <>'75 ' >8 5E:8 ' 5<' 5;8' A<:A8' >7AE:8B'EG<@' G A8' 2 0' =E5' 75' 8LD ;7=75 ' 7@' ' FEC;' F<:8' @<5 =68' F @@8:'5;8' C; : C58:7 57C' C57<@' @B' G<J8:' <>' :E@@7@A' J 58:$;8' 68@A5;' <>'5;8' C; F' <:' ' 2&& ' 7 ' =<E5' Q ' >885' @B' >:<F'5;8'5<G' <>'75 ' J 66 ' 5<' 5;8' E:> C8' <>'5;8' J 58:' 7 ' =<E5' ' >885$ 5' @<' G :5' C @' 5;8' 8@57:8' 68@A5;' <:' B8G5;'=8' 88@' 5' 'A6 @C80' ><:0' 65;<EA;'5;8' J7B5;' 5' <F8'G6 C8 ' 7 ' ' >885' <:' F<:80'5;8'?78J' 7 ' 67F758B' =9'5;8' 7@E< 7578 ' <>'5;8' J 66 $;8 8' :8 8?8:9J;8:8'G<67 ;8B'5<' ' F<<5;0'?75:8<E 7@ GD G8 : @C8' E:> C8$ @' <F8' G6 C8 ' 5;8' 5<::8@5' ; ' J<:F8B' 7@5<' 5;8' :<CI0' @B' ; ' 68>5'@ 5E: 6' =:7BA8 $;8' F< 5' 8L5: <:B7@ :9' >8 5E:8 '<>'5;8' &<E>>:8' B8 ' E 8: 7668^0' ;<J8?8:0' :8'5;8'C ?8:@ ' M<:' ' ' 5;89' :8' 58:F8BN0' J;7C;' 5;8' J 58:' ; ' ;<66<J8B' <E5' <>'5;8' ;8 :5'<>'5;8' :<CI$ ::86R' G6 @I'G 5;'68 B '7@5<'<@8'<>'5;8' A:8 58 50K ' A:<55<' 5; 5' 7 ' =<E5' Q ' >885' C:< ' 5' 75 ' 6 :A8 5' B7 F858:0' @B' ' <:' ' >885' ;7A;0' :<<>8B' =<?8' =9'5;8' 67?7@A' :<CI0' @B' J75;'5;8'5<::8@5' :< 77@A' ' >885'<:'5;8:8 =<E5 ' =86<J0' 5' 5;8' =<55<F'<>' ' >7 E:8$;7 ' C ?8:@' 7 ' 67A;58B' =9' C @B68 0' @B' 5 6I7@A'7@'75'C @'<@69'=8' F @ A8B'=9' 7A@ $

' ?7 758B'5;8'7@58:7<:'<>'5;8' ' 2&& '7@' 0' @B' F9' J<@B8:' 5' 75 'C ?8:@ ' J ' 7@C:8 8B' =9'<= 8:?7@A'5;8' ; :B@8 ' <>'5;8' ;<:@D =68@B8'<E5'<>' J;7C;'5;89' ; ?8'=88@';<66<J8B$ ::86'C;7 8668B'<>>' 6 :A8' G78C80' J;7C;' 7 ' @<J' 697@A'=8><:8' F8$ 5' ; ' ' ;7A;69

G<67 ;8B A6 9 E:> C8 @B F7A;5 ;8 F7 5 I8@ ><: ' F<F8@50 ><: 7C8 G<67 ;8B :<CI$ E5 5;8 J 58:' ; ' ><E@B <E5 5;8 5<F ' J;7C;' J8:8 68 5 ; :B @B 75 7 ' B<558B 66 <?8:' ;9 F7@E58 B8G:8 7<@ F EC;' ' 5;8 > C8 <> <@8 7 ' J;< ; ' E>>8:8B >:<F F 66G<L$;8 8BA8 ' <> 5;8 8 ;5568 ;<66<J ' :8 2 ' @B 5;8 J;<68 E:D > C8 ' <> 5;8 B8G:8 7<@ ' :8 G<; ;8B @8 :69 <:' HE758 ' ;7A;69 ' 5;8 A8@8: 6 E:> C8 <> 5;8 >: AF8@5PP+ ;8 J 58:' ; ' B:7668B F<:8 B88G69 7@5< <F8 ?87@ ' <> 58 5758 5; @ 7@ <5;8:' G6 C8 @B 5;8 G:8 8@C8 <> 5;8 58 5758 F 9 G< 7=69 ; ?8 ; B <F85;7@A 5< B< J75;' 5;8 ><: F 57<@ <> 5;8 ' 2&&

' ::7?8B 5 :876 A 7@ >58:' @ = 8@C8 <> 7L' B 9 J866 57 D >78B J75;' F 9 5<E:' <> 5;8 558:;<:@ J;7C;' ; B =88@ :8@B8:8B ?8:9 G68 @5 =9 5;8 J7667@A@8 ' <> F 9 AE7B8 @B =9 5;8 I7@B67@8 ' <> 5;8 @ 57?8 $ E5 75 F E 5 =8 B F 7558B 5; 5 5;8 7@; =75 @5 ' <> 5;8 (6 <E:@ @C;8 :8 =8;7@B 5;8 57F8 $;87:' G 5; ' :8 ' = B > <:' J<: 8 5; @ 5;89 J8:8 7@ 5;8 57F8 <> ' 8 E E:8 @B 5;87:' 7@@ ' :8 FEC;' 7@>8:7<:' 5< 5;< 8 <@ 5;8 J7 ' 7B8$ > 75 J8:8 <5;8:J7 8 5;8:8 J<E6B =8 @<5;7@A 5< G:8?8@5 5;8 ? 6689 =8C<F7@A <@8 <> 5;8 F< 5 G<GE6 :' @B >:8HE8@58B"<> 66 5;8 ? 6689 ' 7@ 5;8 6G ' =E5 ' 75 7 5<E:7 5 ' J;< 8@58:' 75 88 F' 5< 5;7@ I' <@69 =<E5 ;<J' <<@ 5;89 C @ A85 <E5 <> 75 @B ;8@C8 75 7 ' FEC;' 68 ' I@<J@ 5; @ 75 B8 8:?8 ' 5< =8 <@ CC<E@5 <> 75 ' @ 5E: 6 55: C57<@ $

' =8678?8 5; 5 5;8 A:8 5 ;7@B: @C8 5< 5;8 7FG:<?8F87:5 <> 5;8 G 5;' 7@ 5;8 5 67 @' ? 6689 ' A8@8: 669 7 ' 5;8 J7B8 G:8 B 7FG:8 7<@ 5; 5 5;8 7@@I88G8: ' J<E6B 6<@8 B7:8C569 =8@8>75 =9 @9 F867<: 57<@ <> 5;87:' C<@B757<@$ < ' C8:5 7@ 8L58@5 5;7 ' ?78J ' 7 ' C<::8C50 =E5 7@ FEC;' ' 5;8 G:< G8:759 <> 5;8 @ 57?8 ' 7 ' C<@@8C58B J75;' 5; 5 <> 5;8 7@@I88G8: 5;8 7@58:8 5 ' <> =<5;' :8 G:8559 @8 :69 7B8@57C 6$ / @5B 5;87:' G 5; ' :8 :8@B8:8B 68 ' :<EA;' @B J FG9 ' 5;7@I"5;8 5 ; @ ' FE 5 E=F75 5< 88 5;8 A<6B8@ ; :?8 5 G:7@C7G 669 :8 G8B 7@ J75S8:6 @B @B ?<9$ 5 5;8 F8 57F8 685 5;8 7@@I88G8: ' 6<<I 5< 5;8 C<FF7 :7 5$;87:' EGG67 8 ' :8 @<5 E@>:8HE8@569

P ;8 B8G:8 7<@ ' 7@ A6 C7 58B :<CI ' MJ;7C;' :8 @<5 J 58: J<:@ :8 F<:8 <:' C$ ' @AE6 :$ $ 88 G$ 5 $

B8>7C78@5 7@ HE @5759 @B CC<:B7@A 5< F9 8LG8:78@C8 ?8:9 <>58@ B8G6<: =68 7@ HE 6759$

J7/ @<5 ?8@5E:8 5< C:757C7 8 7@ B85 76 57:8 B7 ;8 J;7C; :8 =:<EA;5 5< 5 =68 7@C8 F G:<><E@B69 7A@<: @5 <> 5;87: C<@ 575ED 57<@$ 5 7 C<F F<@69 7B F<@A 5 6G7@8 5<E:7 5 5; 5 A< 5 >68 ; :8G:8 8@5 FE55<@ @B FE68 B<8 8:?7C8 ><: =88> @B C; F<7 $:8 8:?8 F9 <J@ <G7@7<@ EG<@ 5;7 G<7@5 E@576 75 ; =88@ ;<J@ J; 5 =8C<F8 <> 66 5;8 B8 B FE68 $ E5 F 9 9 ;<G8 J75;D <E5 J<E@B7@A 5;8 E C8G57=767578 <> F9 CHE 7@5 @C8 F<@A 5;8 5 67 @ 7@@I88G8: 5; 5 75 J<E6B 58@B 5< F<<5;8@5;87: 7@58:C<E: 8 J75; 5;87: AE8 5 7> :8HE8 5 ><: <67B ><<B J8:8 68 >:8HE8@569 :8A :B8B C:7F7@ 6$;8 B8G:8C 57@A ER J75; J;7C; 7@HE7:78 ><: :8 669 E= 5 @57 6 ><<B :8 :8C87?8B 6J 9 :8F7@B F8 <> ' EG;7@8 7@@I88G8: J; <:8F :I8B 5; 5 ;8 ; B ;8 :B 'A<<B F @9 5<E:7 5 5: ?86 7@ J75S8:6 @B$ Z 8 03 @ J8:8B Z5;8:8 :8 A<<B F @9$3 Z <J F @9^3 Z) 8663 7B Z ; ?8 88@ ;E@B:8B <: F<:8 75 B<J@ 5 5 =68 BR;<58$3 8 67>58B 7:G ;7 ; @B K Z) ;903 7B ;8 Z5;89 J<E6B J @5 F8 5 8?8:9 B 9 3 Z 8 5; 5 7 @<5 7FG:<= =68$3 Z @ 5; 5 C 803 ;8 :8G678B Z) $ 9 $ 9 $ 2 $ A

/ ' T ' ' ' T '' ' %$P

Z' E5' F7A;59' .<?8' CE5 ' ;<:5 J75;'!E 5'B7 B 7@
;8'6<@A' 6<@A'?78J '<>'G<<:B8 7A@7@A' F @$3

$33 ';B' '3 $'7@'5;8'F 558:'<>'AE7B8 @B';7'C;<7C8'>8/'EG<@';7':86 57?8' 78 :E' 89@85 @B'5J<'<5;8:'J;<8'@ F8'
'B<'@<5'I@<J$;8 8'F8@'J8:8'@<J':=:<EA;5'5<A85;8:@B'<E5'G:8G :57<@'J8:8'C<FG6858B '5;8'J8 5;8:'J 'C68 :7@A'EG$
)8':8 58B'<@' E@B 9 EAE 5' 8 A8:69'J 5C;7@A'5;8'68 8@7@A<>'5;8'F7 5' :<E@B'5;8'A:8 5'G8 I @B' 5 :58B'!E 5'=8><:8'B J@'EG<@'5;8' 5;' <@' '57/' @B'C6<EB68 'F<:@7@A J;7C;' 88F8B'5<G:<F7 8' '; GG9'58:F7@ 57<@'5<'<E:'8@58:G:7 8$
9'A<7@A' 6J 9 =E5'A8@5691 J8' ::7?8B'EG<@'5;8' <6'BE' 7<@'=8><:8'@7@8'<RC6<CI$;@A8'J8:8'GG :8@5$ 4 F767 :'68BA8';B'? @7 ;8B'5;8'G6 5><:F J;8:8EG<@'F9'58@5';B' 5<<B6<<I8B'?8:9'><:6<:@75'5<@8';B'=88@'C 558:8B'=9'J7@B' @B'>:<5 @B';B';6>'B7 GG8 :8B @B'5;8'EF F75'<>'5;8' <6 75 86>J;7C;'7@' Q';B'6J 9'=88@':8 G8C5 =69'=:<B @B'C<?8:8B'=9'@<J J '@<J';:G8:'5;@'5;8':7BA8'<>' @9'C;E:C;:<<> @B'J ';:B'7C8$ 6:8 B9'J8';B'><E@B'5;5'5;8'=B'J8 5;8:'<>'5;8'G 5'J88I';B'B<@8'75'J<:I$;8':<CI'><:'8?8: 6';E@B:8B'>885'=86<J'5;8' <6'J8:8'?:@7 ;8B'J75;'7C8$ << 8 7@C<;8:8@5' @<J'C<?8:8B'5;8' <6B8:' @B';:B8:'=8B'=86<J @B'J8'@8 :69'6< 5'<E:'68 B8:'5;:<EA;'75'5:8 C;8:<E @8 $8'58GG8B'<@' <F8' @<J'J;7C;'88F8B'>7:F @B':78B';7'L8'5<B867?8:' 'J7@A7@A'=6<J E5 !E 5' '75 J ';7A;8 5 5;8'C:E 5'<>

P' 'Y=:78' CC<E@5'<>'5=7'8LCE:7<@'J 'GE=67 ;8B'7@'5;8' $ 2 ' EAE 5'Q $

5678 6<G8 EG<@ J ;7C; ;8 5<<B =:<I8 J 90 @B G<E:8B B<J@ 7@ 8:G8@57@8 5:8 F 0 68 ?7@A 6<@A0 ; :8 5:7G 0 J ;7C; A67558:8B 7@ 5;8 E@0 ><: 5;89 J8:8 A6 9 7C8$ ::860 J75; BF7: =68 :8 B7@8 0 >6E@A ;7F 86> = CI <@5< 5;8 :<CI <>> J ;7C; ;8 ; B 58GG8B0 @B J 5 <@C8 8CF"8B$ 8 7F G69 :8F :I8B0 Z 5'7 '57F8) 8 J8:8 578B EG03 @B0 >58: J8 ; B =88@ 578B EG0 ;8 J8@5 5< J<: I A 7@ '7> @<5;7@A ; B ; GG8@8B$P

) 8 ; B =E@B @5 766E 5: 57<@ ' BE:7@A 5;8 @8L5 5J < ;<E: ' <> 5;8 ? 6E8 <> ' :<G8 5< C67F=8: $) 8 J8:8 578B EG : 5;8: J7B869 G :50 @B B? @C8B0 A8@8: 6690 7@ G 7: $ ::860 J ; < 68B0 J ' ><66<J8B C6< 869 =9 @<5;8: F @0 J ; < 68@5 ;7F ' ;<E6B8: <: G6 C8B @ L8 ;8 B E@B8: ;7 ' >885 0 J ;8@ 5;8:8 J '@88B 0 @B J ;8@ 5;7 C<EG68 J8:8 J866 G6 C8B 5;8 8C<@B G 7: B? @C8B0 7@ 7F76 : > ;7<@0 K 5;8 :<G8 =87@A B: J@ 7@ =9 5;< 8 =<?80 @B G 7B <E5 A: BE 669 =9 5;< 8 =86<J$;8 68 B7@A F8@ A 7@ B? @C8B0 <: 5;8 5;7:B G 7:0 @B < <@$;7 ' F @@8: <> G:<A:8 7<@ J ' 6<J0 =E5 E:8$ @8 F @ <@69 F<?8B 5 ' 57F80 @B 7> ;8 67Q G8B M @B J8 >:8HE8@569 B7B 67GN ;8 C<E6B 67B8 C :C869 ' ><<5 J75;<E5 =87@A C;8CI8B =9 5;8 <5;8: $;8 C8:5 7@59 @B >859 <> 5;8 F85;<B A ?8 C<@>7B8@C8 5< 5;8 <@8 J ;< J ' F<?7@A0 @B @<5 <:B9 @8:?8B ;7F ' 5< +E5 <E5 ;7 ' !7<J8: ' 5< 5;8 E5F< 50 =E5 E 5 7@8B @8:?8 7@ :8 669 B7>>7CE65 75E D 57<@ $ 4<: 5;8 8 :<CI ' MJ;7C;0 75 ; ' =88@ 6:8 B9 7B0 J8:8 8 9 8@<EA ;' E@B8: <:B7@ :9 C7:CE F 5 @C8 N J8:8 @< J' B7>>7CE65 7@ ' ;7A ;' B8A:88$;8 @<J J 58: J ;7C; ; B 5:7C I68B B<J@ ><: F @9 B 9 ' G 5 7@ 675568 5:8 F 0 ; B 5 I8@0 @ 5E: 669 0 5;8 ?8:9 :<E58 =9 J ;7C; J8 J7 ;8B 5< C8@B0 @B0 :8>:<S8@ 7@ 5;8 @7A ;50 ; B A6 S8B 5;8 6 = ' <?8: J ;7C; J8 ; B 5< G 0K <F857F8 ' JB5 ; ' >7@8 >76F ' <> 7C8 ' 5;7@ ' ' ;885 <> G G8:0 @B <F857F8 ' < 5;7C I69 5; 5 J8 C<E6B

P ;7 '7@C7B8@5 <CCE::8B C6< 8 5< 5;8 G6 C8 :8G:8 8@58B 7@ 5;8 8@A: ?7@A ' > C7@A G Q $;8 @8J0 B:9 @<J ' ?8:9 5:<E=68 <F80 @B G<E:8B B<J@ 67I8 >6<E: 7@5< 5;8 58G ' J ;7C; J8:8 CE5 C:< ' 5;8 6<G8$ $;8 >:<@5 F @ CC<:B7@A69 F<?8B ;8 B ' > : ' G< 7=680 @B @C;<:8B ;7F 86> 5< :<CI $ ' :<G8 J ' 8@5 CI \I5< ;7F0 J ' >7L8B 5 8 C;' 8@B0 @B J ' ;86B ' ' : 76 =9 5;8 <5;8: ' 5;89 C:< 8B$) 8 B7B @<5 5:E 5 5< 5;7 ' :<G8 6<@80 =E5 J8:8 578B 7@ 5;8 E E 6 F @@8:$;8 8C<@B :<G8 J ' 8F G6<98B ' @ BB757<@ 6 8CE:759 A 7@ 5 67G $

6F< 5 CE5 ><<5 58G ' 7E 75$;8 J8 5;8:' J ' EG8:;0 5;8 F8@' F B8 67A;5 <>' 5;8 5<760 @B ;<E58B 5<' :<E 8 5;8 8C;<8 ' >:<F' 5;8 '8@5 BR 8:8@ $

) 8 J8@5 <@'A 7690 G 8B5;8 8C<@B 58@5 G6 5><:F0 5;8 677F@890 @B 5;8 <5;8:' J866 :8F8F;8:8B G<7@5 0 @B :8CI<@8B0 C<@>7B8@5690 <@ 688G7@A 5; 5 @7A;5 EG<@5;8 5<G <>' Z 5;8 ;<E6B8:' =E50 =8><:8 J8 ; B J866 ::7?8B 5 5;8><5 <>' 5;8 &:8 5 <J8:0 ' EBB8@:E ;' <>' C<6B 7:' J :@8B E ' 5< 6<<I' <E5$

5' J ' B7>>7CE65 5<' 9 J;8:8 5;7 ' 7:' C F8 >:<F0 75 B7B @<5 =6<J' ' ' J7@B0 =E5 B8 C8@B8B: 5;8:' ' 5;8 J 58:' 7@ ;<J8: = 5;' ' 66 J ' 5: @HE76 A 7@0 5;8 5F< G;8:8 $ 9 '@< 7A@ '<>' B7 5E:=D @C8 0 5;8:8 J ' ' B8 B C 6F0 @B @<5 ' G8CI' <>' C6<EB 5< =8 88@ @9J;8:8$ E5 J8 B7B @<5 :8F 7@?8:9 6<@A'7@'5;7 ' 5 58$;8 C<6B 7:'C F8 A 7@0 @B 5;7 ' 57F8 75 J 'B7>>7CE65 5< 9 J;8:8 75 B7B @<5 C<F8>:<F$) 8 ! F F8B B<J@<E:' ; 5 ' 75 =8 5 A 7@ 5 5;8:7BA80 @B C:8 F8B F<@A 5 5;8 C: A $ 8><:8 J8 ; B A<5 5< 5;8><<5 <>' 5;8 <J8:0 F7 5 ' ; B =88@><:F8B =<?8 @B =86<J$;89 GG8 SR8B 5 >7: 5 7@' F 660 7 <6 58B G 5C;8 'M7@ 8?8: 6 G6 C8 ' 5 5;8 F8 57F8N0 J;7C;' B @C8B @B !8:I8B @B J8:8 5<:@ 7@5< ;:8B ' =9 5;8 J7@B0 =E5 A:8J 679A8:' E@B8:' 5;8 G:<C8 $;89 J8:8 E@758B 5<A85;8:0 @B :8@5 A 7@0K 6<J7@A' E ' 5;8 =6E8 I9 ><:' ' F<F8@50 @B =6<557@A 75 <E5 5;8 @8L50 @B EAF8@58B 7@C8 @5690 E@576 5;8 J;<68 ;8 ?8@ ' J8:8 >7668B J75;' J;EF67@A0 =<767@A C6<EB $ 8><:8 J8 C<E6B 5 I8 <>' <E:' G CI 0 @B A85 E@B8:' @9 I7@B <>' ;8658:0 ' ;E::7C @8 <>' @<J' =E: 5 EG<@'E ' >:<F' 5;8 8 5 5' >866 <' 5;7CI69 5; 5 7E ' >8J' F7@E58 ' 5;8 :7BA8 J ' C<?8:8B =9 75$ " Z) ; 5 ; 66 J8 B<^3 ' ;<E58B 5< ::86 Z <@ 78E:03 7B ;80 Z 5;8 J7@B' 7 ' = B 0 5;8 J8 5;8:'; ' C; @A8B 0 J8 :8 ;8 ?769 6 B8@$ 8:8 7 ' ' >7@8 ' C 685 E ' 5<G ' >' J8 A< <@' J8 ; 66 =8 ; 6> >:<S8@$; 5 7 ' ' <G7@7<@$3 < <@8 B7>>8:8B >:<F' ;7F 0 < J8 >866 5< J<:I' 5< F I8 ' G6 C8 ><:' 5;8 58@50 @B 7@' $3 C<EG68 <>' ;<E: ' C<FG6858B 5;8 G6 5><:F' J ;7C;' J8 ; B C<F F8@C8B 7@ Q$;8 C6<EB ' ; B =6 CI8@GB BE:7@A 5; 5 57F8 @B J8 ; B ; :B69 >7@7 ;8B <E:' 5 I' =8><:8 ' 5;E@B8: 5<:F' =:<I8 EG<@'E ' J75;' GG 667@A >E:9$ 4<:I8B 67A;5@7@A ;<5 <E5 5

5;8'5E::85 ' =<?8(@B' 5'5;8'C: A'=86<J$ 5'J ' <'C6< 8'5; 5'J8' HE 768B' 5'75 'B :5 $ 5' 88F8B'5<' C<:C;'E 0K J8'J8:8'7@'5;8'?8:9' ><CE '<>'5;8' 5<:F$;8'5;E@B8:'J ' 7FE65 @8<E 'J75;'5;8'>6 ;8 0 ;<:5' @B' ; :G(@B' F<:8'67I8'5;8'@<7 8'<>' 'B<<:'5; 5'7 '?7<68@569' 6 FF8B(FE657G678B' '5;<E @B ><6B(5; @' @9'@<7 8'5<'J;7C;' 'C @' C<FG :8'75$

) ;8@' ' 9'5; 5'5;8'5;E@B8:'J ' 2 2 'J75;'5;8'67A;5D @7@A(' G8 I' ' @' 7@8L C5' G8: <@$ 9' F8 @7@A' 7 '5; 5'5;8' 57F8' J;7C;' 86 G 8B' =85J88@' 887@A' 5;8'>6 ;' @B' ;8 :7@A'5;8' :8G<:5'J '7@ GG:8C7 =68'5<'F8$ 'J7 ;'5<' G8 I'J75;' 66' G< 7=68' G:8C7 7<@(@B'5;8:8' :8'5J<' G<7@5 '7@' :8A :B'5<'5;7 '5<:F'EG<@' J;7C;' 'C @' G8 I'J75;' <F8' CCE: C9$;8'>7: 5'7 '7@' :8A :B'5<' 5;8'B7 5 @C8'<>'5;8'67A;5@7@A'>:<F'<E:'G :59$) 8' '$' ; ?8'=88@' '>885'>:<F'75'7>' ' 8C<@B'<>'57F8' ; B'86 G 8B' =85J88@' 887@A' 5;8'>6 ;8 ' @B' ;8 :7@A'5;8' :8G<:5'(@B' ' 8C<@B'<>'57F8'7 '@<5' GG:8C7 58B' =9'7@8L C5' G8: <@ $ 5' J ' C8:5 7@' 5; 5' J8' J8:8' <F857F8 '68 ' 5; @' 5; 5' B7 5 @C8' >:<F' 5;8'67A;5@7@A(=8C E8' ' J'75'G '7@'>:<@5'<>'J866 I@<J@'G<7@5 '<@' 5;8' :7BA8(=<5;' =<?8' @B' =86<J' / (J;7C;' J8:8'68 ' M <F857F8 'C<@ 7B8: =69'68 N5; @' '5;<E @B'>885'B7 5 @5$

8C<EB69(7@' :8A :B'5<'5;8'B7>>7CE659'<>'B7 57@AE7 677@A' <E@B ' J;7C;' :8' F8:869'8C;<8 '>:<F'5:E8'5;E@B8:(<:'5;8' @<7 8' J;7C;' <CCE:' 7FE65 @8<E 69' J75;'67A;5@7@A$: A<'8@58:8B'7@5<'5;7 ' E=!8C5' 5' <F8'68@A5;'7@';7 ' 858<:<6<A7C 6' 9 (@B' 88F8B'5<' B<E=5'7>'75' (<EB 8?8:'=8'G< 7=68'5<'B858:F7@8'J;85;8:'8C;<8 ' :8' 9 '5;8'C E 8'<>'5;8' :</7@A' <E@B ' C<F F<@69'C 668B'5;E@B8:$P' ' ; 66' @=5' 558FG5'5<' ;<J'J;85;8:'5;8' :<667@A' <E@B ' ;<E6B' 8?8:(<:'@8?8:(=8' :8A :B8B' ' 5:E8'5;E@B8:(=E5'<@69'5; 5'BE:7@A' 5;7 ' 5<:F'EG<@'5;8' 558:;<:@'75'J $'G< 7=68'5<'B7 57@AE7 ;'5;8' +<E@B'<>'5;8'5;E@B8:'75 86>'>:<F'5;8' <E@B 'M:<667@A' @B'<5;8:J7 8N' J;7C;'J8:8'F8:869'5;8'8C;<8 '<>'5;8'>7: 5(<:7A7@ 6' <E@B$

@' Z ;8:8'7 (5;8:8><:8(675568' ;<G8'<>'5;E ' ::7?7@A' 5' @95;7@A'B8C7 7?8' ' 5<'5;8' 8$# C5'G :5'J;7C;'8C;<8'5 I8'7@'5;8'G:<BEC57<@'<>'5;8' :<667@A' <E@B'<>'5;E@B8:$'3 :$' (@A67 ;'8B$(5: @ 6 58B'=9' <6$ =7@8'[<@AF @ ($

5 5;8 G6 C8 J;8:8 J8 J8:8 C FG8B ' :8F :I ;68 8C;< C<E6B =8 ;8 :B M<@8 < :8F :I ;68 5; 5 7> 75 C<E6B ;8 ;8 :B 7@ 5;7 ' C<E@5:9 75 J<E6B B: J C:<JB '><:' 75 ' <J@ I8N0 ' =8678?8 75 C F8 >:<F 5;8 C67>> ' <> 5;8 ' 8@5 BR 8:8@ $ 5 J ' ' > ?<E:758 FE 8D F8@5 J75;' E ' 5< ;<E5 5< :<E 8 5;7 ' 8C;<0 J;7C;' :8G8 58B @9 ; :G C:90 7@ ' ?8:9 B7 57@C5 F @@8:0 8?8: 6 57F8 0 >58:' 5;8 6 G 8 <> <F85;7@A 67I8 'B<S8@ 8C<@B $;8 5;E@B8: 5<:F 6 58B @8 :69 5J <;<E: 0 @B : A8B 5 57F8 ' J75;' A:8 5 >E:90 @B 5;8 G:<6<@A8B :<667@A '>:<F 5;8 E::<E@B7@A F<E@5 7@ 0 >58:' <@8 >6 ;0 ; B @<5 E E 669 C8 8B =8><:8 @<5;8:' 85 <> 8C;<8 ' 5<<I' EG 5;8 B7 C<E: 80 @B F 7@5 7@8B 5;8 :8?8:=8: 57<@ ' J75;<E5 ' =:8 I$ CC 7<@ 669 5;8:8 J ' ' G E 80 7@58::EG58B G:8 8@569 =9 ' 7@A68 C6 G0 5;8 CC<FG @7F8@5 <> ' 7EA68 B7 C; :A80 @B >58:' EC;' 57F8 ' 'C<E6B :8C<A@7 8 5;8 8C;<8 '>:<F 5;8 ' 8@5 BR 8:8@ ' =9 5;87:' G8CE67 :' :8G8D 5757<@ 0 @B =9 5;8 68@A5;' <> 57F8 J;7C;' ; B G 8B 7@C8 5;8 :8G<:5 ' ; B <CCE::8B <> J;7C;' 5;89 J8:8 5;8 8C;<8 $

> ' ; B =88@ E@ J :8 <> 5;8 8L7 58@C8 <> 5;7 ' 8C;<0 ' ;<E6B ; ?8 EGG< 8B 5; 5 5;8 :8 <E@B ' J8:8 <:7A7@ 6 :8G<:5 ' <> 8LG6< 7<@ ' J;7C;' ; B =88@ E@@<57C8B0 7@C8 7@ 7@58@ 759 5;89 J8:8 C :C869 B7 57@AE7 ; =68 >:<F 5;8 5:E8 5;E@B8:' 0 J;7C;0 BE:7@A 5;7 ' 5<:F0 88F8B 5< F80 EG<@ 8?8:9 <CC 7<@0 5< C<@ 7 5 <> ' 7@A680 ; : ;0 7@ 5 @5 @8<E ' <E@B$P

:' 7>0 7@ 58 B <> =87@A G6 C8B 5 ' B7 5 @C8 <> 68 ' 5; @ ' 5;<E @B >885 >:<F 5;8 G<7@5 ' <> 8LG6< 7<@ M @B C<@ 8HE8@569 ;8 :D 7@A 5;8 :8G<:5 6F< 5 7@ 5;8 F8 F<F8@5 ' J8 J 5 ;8 >6 ;0 @B

P ;8 F8 ; ' 88F8B 5< F8 5< ;8 5;8 C 8 5 66 57F8 ' J;8@ ' ; 98 ;88@ C6< 8 5< 5;8 G<7@5 ' <> 8LG6< 7<@$;8:8 ; ' ;88@ 6J 9 ' ' B7 57@C5 7@58:? 6 =85J88@ 5;8 >7: 5 8LG6< 7<@ @B 5;8 :<667@A <E@B ' @B 8C<@B :9 8LG6< 7<@ ' J;7C;' ' ; ?8 3 ' 5< ;8 F8:869 8C;<8 '0 ;E5 75 ; '@8?8:' ;88@ G< 7=68 M8LC8G5 7@ 5;8 =<?8 F8@57<@8B C 8N 5< & '5;8F ' EC;$

5;8:' ; ?8 <= 8:?8B 5;8 A F8$ Z ;8 A8<6<A7 50 :<>8 <:' ;8<= 6B0 <> ;E:0 J;< J '7@ 5;8 <6>8:7@< 5<:F0 =85J88@ 5;8 C;78:5 C;8:' @B /:B8@ 6G0 7@ 5;8 868C5:7C C6<EB 0 9 ' 5; 5 5;8 G8 6 ' J8:8 ;<:50 670 8 C @@<@ ;<5 0 =E5 <> ' C68 :8:0 F<:8 C: C I7@A 5<@80 @B 5; 5 5;8 :<667@A' <> 5;8 5;E@B8:' J '<@69 ;8 :B >E:5;8:' <@$3 8:6CG C;R ' @A67 ;' CB$0 G$ $

]5678 :<667@A ' >58:' ' C<@ 7B8: =68 7@58:? 6 <> 57F8N J8 ; B =88@ G6 C8B' <5; 5'5;8 <:7A7@ 6 :8G<:5 ; B'> 668@' <@ <E:'8 :' @8 :69 5' 5;8 F8 F<F8@5 ' 5;8 8C;<8 J8 ;<E6B' G:<= =69 ; ?8 C<@D 7B8:8B'5; 5'5;8 ECC8 7?8 :8G<:5 ' @B' :<667@A ' <>5;8 8C;<8 ' J8:8 :8G<:5 ' <> ECC8 7?8 8LG6< 7<@ ' <CCE::7@A' @8 :69 5' 5;8 F8 F<F8@50 @B'5; 5'5;89 J8:8 ;<5 8C;<8 ' 5' /$

;7 ' 7 ' 5;8 <@69'57F8 M<E5 <> F @9 5<:F ' J75@8 8B'7@'5;8 6G N ' ; ?8 <=5 7@8B' 8?7B8@C8 5; 5'5;8 :<667@A ' <>5;E@B8:' :8 C5E 669 8C;<8 0 @B'5; 5'5;89 :8@<50 @8C8 :769 0 5;8 :8G<:5 ' <> ' @EF=8:' <> B7 C; :A8 ' <?8:' ' 6<@A' 67@80 <CCE::7@A' 5' ? :97@AP B7 5 @C8 ' >:<F'5;8 G8C5 5<:0 @B' C<@ 8HE8@569 E@ =68 5< ::7?8 5' ;7 ' 8 :' 5'5;8 F8 F<F8@50 65;<EA;' 5;89 ><66<J'8 C;' <5;8:' < J7>569 '5< G:<BEC8 ' <E@B' F<:8 <:'68 ' C<@57@E<E $P

;8 J7@B' BE:7@A' 66 5;7 ' 57F8 88F8B' 5< =6<J'5<68: =69 C<@D 7 58@569 >:<F'5;8 8 5$ 5' F<58 5;858@5 < ?8;8F8@569 M@<5J75;D 5 @B7@A'75 J ' G :569 G:<58C58B' =9 :<CI N 5; 5'J8 ; B' A: ?8 >8 :' <E:' :8>EA8 F7A;5 =8 =6<J@' J 9 =<B769 0 J75;'<E: 86?8 '7@ 7B8 0 <0 BE:7@A' <F8 <>5;8 6E66 0 J8 7 E8B' <E5 @B' =E765 ' J 66 5< J7@BD J :B$ 5'; 6> G 5'5;:88 5;8 J7@B' C; @A8B' 5<5;8 @<:5; J8 50 @B' 5;8 C6<EB ' ? @7 ;8B$) 8 7F F8B7 5869 5<<I' 5;8 <GG<:5E@759 5< 8@B' B<J@' <@8 <>5;8 G<:58:' ME@B8:' G:<58C57<@ <> <F8 <>5;8 <5;8: 0 '675568 =89<@B'5;8 <6 BE 7<@N0 ' 5;8 58@5 J<E6B' CC<FD F<B 58 <@69 >7?8 G8: <@ $ 4:<F'5;7 ' 57F8 5< E@ 85 5;8 J8 5;8:' J ' ? :7 =68$ 5' J ' <F857F8 ' =6<J7@A' @B' @<J7@A' ; :B0 @B' <F857F8 ' ' B8 B' C 6F$;8 = B' J8 5;8:' J ' 8?7B8@569 C<@>7@8B' 5<5;8 <@5 8:?7@0 ><:' J ;8@'5;8 C6<EB ' 67>58B' J8 C<E6B' 88 8?8:9

P :$.$ &6 7 678:' ; ' >:8HE8@569 G<7@58B' <E5 5; 5 66 <E@B ' 7@' = 66<<@ ' 5' <F8 B7 5 @C8 >:<F'5;8 8 :5;' :8 @<5 =68 ><:'5;87:' =:8?759$ Z' 5'7 ' G@8 <E@B' <@69 0 8 ' ' ' 3 ' ' & 'C @B'5;7 '7 ' C; : C58:7 57C <> 66 <E@B '7@'5;8' = 66<<@0 <@8 C68 :' <E@B0 C<@57@E7@A' BE:7@A' 75 ' <J@' ?7=: 57<@ 0 5;8@' A<@8 7@' ' F<F8@5$3 P # ' F ' 0 G$ QQ2$N

'68 :@'>:<F' :$ &6 7 ;8:'5; 5'5;8 5;E@B8:' C6 G ' J;7C;' ; ?8 =88@ ;8 :B' =9 ;7F' BE:7@A' ;7 ' ¢5: ?86 '7@ 5;8 7:' R ; ?8 =88@ @< 8LC8G57<@ 5< 5;8 A8@8: 6 :E680 @B'5;8 +7= 8@<8 <> :<667@A' ; '><:57>78B' ;7 ' =8678 > 567 5' 5;8 :<667@A' <E@B ' J;7C;' CC<FG @9 5;E@B8:' :8 8C;<8 0 @B' 8C;<8 '

THE CRAGS OF THE MATTERHORN, DURING THE STORM, MIDNIGHT, AUGUST 10, 1863.

5767@A' 567 5' C<E6B' .=8 88@' 4:<F' <E:' A758$¢ <@58' (7 <(' ' 67E@B:8B' F768 ' <>(' J (' C68 :(' @B' 5;8' E@' 85' A<:A8<E 69"=8;7@B' 5;8' : @A8' <>' <@5' 6 @C$ ") 8' G 8B' 5;8' @7A675' C<F><:5 ;69 +8?8@' 6ELE:7<E 69' K7@' <E:+6 @;85 = A (' =E5' 5;8:8' J ' 675568' C; @C8' <>' 688G7@A(' =8D 5J88@'$5;8' @<7 8' <>' 5;8' J7@B(' <>' 5;8' 5;E@B8:(' @B' <>' 5;8' > 667@A' :<CI $ ' ><:A ?8' 5;8' 5;E@B8:' ><:' 5;8' I8' <>' 5;8' 67A;5@7@A$ ' F<:8' G68@B7B' G8C5 C68' 5; @' 75 ' 766EF7@ 57<@' <>' 5;8' 558:;<:@' C: A ' ' B<' @<5' 8LG8C5' 5<' 88$P

;8' A:8 58 5' :<CI > 66 ' 6J 9 ' 88F8B' 5<' <CCE:' 7@' 5;8' @7A;5(' =85J88@' F7B@7A;5' @B' B 9=:8 I$;7 ' J ' @<57C8 =68'<@' 8 C;' <>' 5;8' 8?8@' @7A;5 ' J;7C;' ' G 8B' EG<@' 5;8' <E5; J8 5' :7BA8(' 5' ;87A;5 ' ? :97@A':<F' 0 ' 5<' 0 ' >885$ $ '*" R]

' F 9'=8' J:<@A' 7@' EGG< 7@A' 5; 5' 5;8' > 66 ' 7@' 5;8' @7A;5' :8' A:8 58:'5; @' 5;< 8'7@' 5;8' B 957F8(' 7@C8' <E@B' C E 8 ' FEC;' F<:8' 8>>8C5' BE:7@A' B :I@8 ' 5; @' J;8@"5;8' C E 8' <>' 75 ' G:<BEC57<@' 7 ' 88@$?8@' ' 7A;' F 9';8' 58::7=68' 7@' 5;8' 5766@8 ' <>' 5;8' @7A;5$ @' 5;8' B 957F8' <@8R ' 558@57<@' 7 ' G:<= =69'B7?7B8B' =85J88@' 5;8' <E@B' @B' 5;8' F<57<@' <>' :<CI ' J;7C;'> 66(<:' 75' F 9'=8' C<@C8@5: 58B' <@' <5;8:' F 558: $ E5' 75' 7 ' C8:5 7@' 5; 5' 5;8' A:8 58 5' <>' 5;8' > 66 ' J;7C;' ; GG8@8B' BE:7@A' 5;8' @7A;5' 5<<I' G6 C8' >58:' F7B@7A;5(' @B' 5;7 ' ' C<@@8C5' J:5;' 5;8' > C5' 5; 5' 5;8' F L7FEF' <>' C<6B' BE:7@A' @9' 5J8@5! <E:' ;<E: ' ?8:9' C<F F<@69' <CCE: ' =85J88@' F7B@7A;5' @B' B J@$

) 8' 5E:@8B' <E5' 5' $ ' $ 2 ' <@' 5;8' 5;(' @B' J8:8' B7 F 98B' 5<' >7@B' 5; 5' 75' 5766' C<@57@E8B' 5<' @<J$ 5' ' $ 2 ' 5;8' @<J' C8 8B' 5<' > 66(@B' 5;8' E@' ;<J8B' 75 86>' >88=69(' <' J+6 G CI8B' EG"<E:' = AA A8(' @B' 85' <E5' 5<' 5:9' 5<' A85' EG<@' Z' 5;8' ;<E6B8:$3) 8' 5:EAA68B' EGD J :B ' E@576' 868?8@' <RC6<CI(' @B' 5;8@' 75' C<F F8@C8B' 5<' @<J' A 7@$) 8' ;86B' ' C<E@C76(' 5;8' <G7@7<@ ' 8LG:8 8B' 5' 75' J8:8' E@ @7F<E ' A 7@ 5' B? @C7@A(' @B' ' B8C7B8B' 5<' :85:8 5$ 4<:' J"8' ; B' :7 8@'68 ' 5; @' ' >885' 7@' 5;8' G 5' 5J<' ;<E: (' @B' ; B' @<5' 8?8@' ::7?8B' 5' 5;8' :<G8' J;7C;' 9@B 66R ' G :59' 68>5' =8;7@B(' 55 C;8B' 5<' 5;8' :<CI 0

P' 88' GG8@B7L' ><:' 5;8' 8LG8:78@C8 ' <>' :$ $ $ 8 5;C<58' BE:7@A' '5;E@B8: 5<:F' <@' 5;8' 558:;<:@' 7@' $

in 1862. At the same rate of progression it would have taken us from four to five hours to get upon "the shoulder." Not one of us cared to attempt to do so under the existing circumstances; for besides having to move our own weight, which was sufficiently troublesome at this part of the ridge, we had to transport much heavy baggage, tent, blankets, and provisions, ladder, and 450 feet of rope, besides many other smaller matters. These, however, were not the most serious considerations. Supposing that we got upon "the shoulder," we might find ourselves detained there several days, unable either to go up or down.* I could not risk any such detention, being under obligations to appear in London at the end of the week.

We got to Breil in the course of the afternoon; it was quite fine there, and the tenants of the inn received our statements with evident scepticism. They were astonished to learn that we had been exposed to a snow-storm of twenty-six hours' duration. "Why," said Favre, the innkeeper, "*we* have had no snow; it has been fine all the time you have been absent, and there has been only that small cloud upon the mountain." Ah! that small cloud! None except those who have had experience of it can tell what a formidable obstacle it is.

MONSIEUR FAVRE.

Why is it that the Matterhorn is subject to these abominable variations of weather? The ready answer is, "Oh, the mountain is so isolated; it attracts the clouds." This is not a sufficient answer. Although the mountain *is* isolated, it is not so much more isolated than the neighbouring peaks that it should gather clouds when none of the others do so. It will not at all account for the

* Since then (on at least one occasion), several persons have found themselves in this predicament for five or six consecutive days!

C6<EB 5 J677C67 :8>8:0 J677C67 7 @<5 ><:F8B =9 @ AA7BA 57<@ <> F 668:0 5: 9 C6<EB B: J@ 5<A85;8:> :<F B7 5 @C8 M CEF C<668C5 :<E@B 6<A 7@ 5;8 J 58:N =E5 7 C:8 58B A 7@ 5 5;8 F<E@5 7@ 75 86>0 @B G:7@A 7@5< 8L7 58@C8 J;8:8 @< C6<EB J8:8 88@=8><:8$ 5 7 ><:F8B @B ; @A C;78>69 A 7@ 5 5;8 <E5;8:@ 7B8 0 @B G :57CE6 :69 A 7@ 5 5;8 <E5; 8 58:@ 7B8$ 5 >:8HE8@569 B<8 @<5 8@?86<G 5;8 EF F750 @B : :869 8L58@B B<J@ 5< 5;8 &6 C78:B E 7<@0 @B 5< 5;8 &6 C78:B E <@5 8:?7@ =86<J$ 5 ><:F 7@ 5;8 >7@8 5 J8 5;8:0 <@ C6<EB68 @B J7@B68 B 9 $

C<@C87?8 5; 5 J8 ;<E6B 6<<I 5< B7>>8:8@C8 <> 58FG8: 5E:8 :5;8:5; @ 5< 5;8 ;87A;5 <:7 <6 57<@ <> 5;8 F<E@5 7@ ><: @ 8LD G6 @ 57<@$ F 7@C67@8B 5< 55:7=E58 5;8 B7 5E:= @C8 J;7C;' <CCE: 7@ 5;8 5F< G;8:8 <> 5;8 <E5;8:@ 7B8 <> 5;8 558:;<:@ <@ >7@8 B 9 0P G:7@C7G 669 5< 5;8 > C5 5; 5 5;8 F<E@5 7@7 F<E@5 7@0 5; 5 75 :8C87?8 A:8 5 F<E@5 <> ;8 50> @B 7 @<5 <@69 J :F8: 75 86>0 =E5 7 E::<E@B8B =9 @ 5F< G;8:8 <> ;7A;8: 58FG8: 5E:8 5; @ EC;' G8 I ; 5;8)87 ;<:@ @B 5;8 9 I F F0 J;7C;' :8 8F7@8@569 9 F<E@5 7@ $

@ C8:5 7@ 5 58 <> 5;8 5F< G;8:8 75 58FG8: 5E:8 F 9 =8 5<68: =69 E@7><:F <?8: J7B8 :8 @B 5< A:8 5 868? 57<@ $; ?8 I@+J@ 5;8 5;8:F<F858: 5< ;<J 1 7@ 5;8 ; B8 5 5;8 5<G <> @ 6G7@8 G8 I F<:8 5; @ 0 >885 ;7A;0 @B ;E5 ?8:9 >8J B8A:88 ;7A;8: <: 1 >885 6<J8:$ 5 <5;8: 57F8 0 5;8:8 J766 =8 B7>>8:8@C8 <> ><:59 <: >7>59 B8A:88 M4 ;5N =85J88@ 5J< 5 57<@ 0 5;8 ;7A;8: @<5 F<:8 5; @ <: 1 >885 =<?8 5;8 6<J8:$

:<?7B8B 5; 5 5;8 58FG8: 5E:8 J E@7><:F0 <: @8 :69 <0 </ 7B8 <> 5;8 558:;<:@0 @B 5< C<@ 7B8: =68 B7 5 @C8 =<?8 75 EF F750 @< C6<EB J<E6B =8 67I869 5< ><:F EG<@ 75$ E5 7> 5;8 5F< G;8:8 7F F8B7 5869 E::<E@B7@A 75 7 J :F8: 5; @ 5;8 C<@D 57AE<E 5: 5 0 6<C 6 cC<E: @5 C8@B @5R FE 5 @8C8 :769 =8 A8@8: 58B0 @B G<:57<@ <> 5;8 C<<68: EG8:7@CEF=8@5 M<: C7:CEF

P P F G8 I7@A 8LC6E 7?869 <> 5;8 B7 5E:= @C8 J;7C;' <CCE: 7@ 5;8 B 9 57F8 B7E7@A >7@8 J8 5;8:$

_ ;8 :<C I :8 <F857F8 < ;<5 5; 5 5;89 :8 6F< 5 G 7@>E6 5< 5<EC;$

jacent) air will naturally be attracted towards the mountain, where they will speedily condense the moisture of the warm air in contact with it. I cannot explain the downrushes of cold air which occur on it, when all the rest of the neighbourhood appears to be tranquil, in any other way. The clouds are produced by the contact of two strata of air (of widely different temperatures) charged with invisible moisture, as surely as certain colourless fluids produce a white, turbid liquid, when mixed together. The order has been—wind of a low temperature—mist—rain—snow or hail.*

This opinion is borne out to some extent by the behaviour of the neighbouring mountains. The Dom (14,935 feet) and the Dent Blanche (14,318) have both of them large cliffs of bare rock upon their southern sides, and against those cliffs clouds commonly form (during fine, still weather) at the same time as the cloud on the Matterhorn; whilst the Weisshorn (14,804) and the Lyskamm (14,889), (mountains of about the same altitude, and which are in corresponding situations to the former pair) usually remain perfectly clear.

I arrived at Chatillon at midnight on the 11th, defeated and disconsolate; but, like a gambler who loses each throw, only the more eager to have another try, to see if the luck would change: and returned to London ready to devise fresh combinations, and to form new plans.

* The mists are extremely deceptive to those who are on the mountain itself. Sometimes they *seem* to be created at a *considerable distance*, as if the whole of the atmosphere of the neighbourhood was undergoing a change, when in reality they are being formed in immediate proximity to the mountain.

CROSSING THE CHANNEL.

He pointed out the direction from which an attack was most likely to be successful, and Mr. William Mathews and the Rev. T. G. Bonney (to whom he communicated the result of his labours) attempted to execute the ascent, with the brothers Michel and J. B. Croz, by following his indications. But they too were defeated, as I shall relate more particularly presently.

MICHEL-AUGUSTE CROZ (1865.)

The guide Michel Croz had thus been engaged in both of these expeditions in Dauphiné, and I naturally looked to him for assistance. Mr. Mathews (to whom I applied for information) gave him a high character, and concluded his reply to me by saying, "he was only happy when upwards of 10,000 feet high."

I know what my friend meant. Croz was happiest when he was employing his powers to the utmost. Places where you and I would "toil and sweat, and yet be freezing cold," were bagatelles to

;7F0 @B 75 J ' <@69 J ;8@ ;8 A<5 =<?8 5;8 : @A8 <> <:B7@ :9 F<:5 6 0 @B J ' :8HE7:8B 5< 8FG6<9 ;7 ' F A@7>7C8@5 5:8@A5;0 @B 5< B: J EG<@ ;7 ' E@ E:G 8B I@<J68BA8 <>7C8 @B @<J0 5; 5 ;8 C<E6B =8 7B 5< =8 :8 669 @B 5:E69 ; GG9$

> 66 5;8 AE7B8 ' J75;' J;<F ' 5: ?8668B0 7C;86 :<S) ' 5;8 F @ J;< J ' F< 5 >58:' F9 <J@ ;8 :5$ 8 B7B @<5 J<:I ';I8 ' =6E@5 : S<:0 @B 5 I8 5< ;7 ' 5<76 E@I7@B69$ 8 B7B @<5 @88B E:A7@A0 <:'5<=8 5<6B ' 8C<@B 57F8 5< B< @95;7@A$ <E ; B =E5 5< 9 9$ ' J ' 5<=8 B<@80 @B $ 9 75 J ' 5<=8 B<@80 @B 5;8 J<:I ' B<@80 7> 75 J ' G< 7=68$ EC;' F8@ :8 @<5 C<F F<@0 @B J;8@ 5;89 :8 I@<J@ 5;89 :8 ? 6E8B$ 7C;86 J ' @<5 J7B869 I@<J@0 =E5 5;< 8 J;< B7B I@<J ';7F C F8 A 7@ @B A 7@$;8 7@ C:7GD 57<@ 5; 5 7 ' G6 C8B EG<@ ;7 ' 5<F= 5:E5;>E669 :8C<:B ' 5; 5 ;8 J Z=86<?8B =9 ;7 ' C<F: B8 ' @B 8 588F8B =9 5: ?8668: $3

5 5;8 57F8 5; 5 ' J ' G6 @@7@A F9 !<E:@890 F9 >:78@B 0 8 : $ $) $ <<:8 @B <: C8) 6I8:' J8:8 6 < B: J7@A EG 5;87:' G:<A: FF8 0 @B0 ' J8 ><E@B 5; 5 <E:' J7 ;8 ' J8:8 ?8:9 7F76 :0 J8 A:88B 5< E@758 <E:' :8 G8C57?8 G :578 $;8 8LCE: 7<@ ' J;7C;' :8 B8 C:7=8B 7@ 5;7 ' @B 5;8 5J< ><66<J7@A C; G58: ' :8 FE5E 6 7B8 ' J677C;' JF:8 !<7@569 8L8CE58B$

E:' E@758B G:<A: FF8 J ' >: F8B < ' 5< ?<7B 688G7@A 7@ 7@@ 0 @B < 5; 5 J8 ;<E6B 88 >:<F 5;8 ;7A;8 5 G<7@5 55 7@8B <@ <@8 B 90 'C<@ 7B8: =68 G<:57<@ <>5;8 :<E58 J;7C;' J ' 7@58@B8B 5< =8 ><66<J8B <@ 5;8 @8L5$;7 ' 6 558:' F 558:' J ' @ 7FG<:5 @5 <@8 5< E 0 ' 66 <>' <E:' G:<!8C58B 8LCE: 7<@ ' J8:8 @8J' <@8 0 @B 68B <?8:' A:<E@B =<E5 J;7C;' 5;8:8 J ' ?8:9 675568 7@><:F 57<@ 7@ G:7@5$ 9 >:78@B ' ; B ; GG769 8CE:8B ;:7 57 @ 7F8:' <>& :7@B86J 6B ' 5;87:' AE7B8$;8 C<F=7@ 57<@ <> :<S @B 7F8:' J ' ' G8:>8C5 <@8$ R <5;' F8@' J8:8 7@'5;8 G:7F8 <>67>8 =<5;' J8:8 8@BE8B J75;' 5:8@A5;' @B C57?759 > :' =89<@B 5;8 ?8: A8 0 @B 5;8 C<E: A8 @B 5;8 I@<J68BA8 <>8 C;' J ' 67I8 E@B<E=58B$;8 58FG8:' <> 7F8:' 75 J ' 7FG< 7=68 5< :E>>68 0 ;8 J ' 8?8:' <=67A7@A @B 8@BE:7@A0K

P :<S 4 %Y=<:@ 5 5;8 (766 A8 BE <E:0 7@' 5;8 ? 6689 <> 67 7@<E@7L0 <@ G:76 QQ0 ' 0 7F8:' J ' '98 :' <:' 5J< <6B8:$

' =<6B' =E5' ' >8' F @$; 5' J ;7C ;' ;8' 6 CI8B' 7@' >7:8K 7@' B ; K' J ' EGG678B' =9' :<S0' J ;<0' 7@' ;7 ' 5E:@0' J ' I8G5' 7@' G6 C8' =9' =@8:$ 5' 7 ' G68 @5' 5<' :8F8F=8:' ;<J' 5;89' J<:I8B' 5<A85;8:0' @B' ;<J' 8 C;' <@8' C<@>7B8B' 5<' 9<E' 5; 5' ;8' 67I8B' 5;8' <5;8:' <' FEC;' =8C E 8' ;8' J<:I8B' <' J 8660 =E5' 75' 7 ' B0' ?8:9' B0' 5<' 5;< 8' J;<' ; ?8' I@<J@' 5;8' F8@0' 5<' I@<J' 5; 5' 5;89' C @' @8?8:' J<:I' 5<A85;8:' A 7@0

) 8' F85' 5' 5$ 7C;86' <@' 5;8' <@5' 8@7 ' :< B0' 5' F7BB 9' <@' .E@8' Q 0' 20' @B' G:<C88B8B' 7@' 5;8' >58:@<<@' <?8:' 5;8' <6' B8' (66<7:8 ' 5<' 5;8' ?766 A8' <>' 5;8' F8' @ F8$;8' EF F75' <>' 5;7 ' G:8559' 675568' G ' 7 ' =<E5' ' >885' =<?8' 5$ 7C;860' @B' >:<F' 75' J8' ; B' ' > 7:' ?78J' <>' 5;8' 7AE7668 ' BR :?80' ' A:<EG' <>' 5;:88' G8 I ' <>' 7@AE6 :' ><:F0' J ;7C;' 75' J ' <E:' 8 G8C7 6' <=!8C5' 5<' 7@?8 57A 58$P' ;89' ; B' =88@' 88@' =9' <E: 86?8 ' @B' <5;8: ' >:<F' @EF8:<E ' B7 5 @5' G<7@5 0' @B' 6J 9 ' 6<<I8B' ?8:9' ;7A;' @B' ?8:9' 7@ CC8 7=68' 0 =E5' J8' ; B' =88@' E@ =68' 5<' <=5 7@' @9' 7@><: F 57<@' =<E5' 5;8F0' 8LC8G5' 5;8' >8J' J<:B ' 7@' .< @@8R') ' 2' % 2 $ ' ?7@A' F B8' <E5' >:<F' 5;8' EF F75' <>' 5;8' <6' B8' (66<7:8 ' 5; 5' 5;89' C<E6B' =8' GG:< C;8B' >:<F' 5;8' (6689' <>' (66<7:8 0' J8' ; 58@8B' B<J@' 5<' >7@B' ' G6 C8' J;8:8' J8' C<E6B' G ' 5;8' @7A;50' ' @8 :' ' G< 7=68' 5<' 5;8' 8@5: @C8' <>' 5;8' 675568' ? 6689' 68 B7@A' EG' 5<' 5;8F$

9' @7A;5> 66' J8' ::7?8B' 5' 5;8' 8@5: @C8' 5<' 5;7 ' 675568' ? 6689' M(66<@' B8 ' 7AE@78 ' BR :?8N0' @B' ><E@B' <F8' =E76B7@A ' G6 C8B' !E 5' J;8:8' 5;89' J8:8' J @58B$;8' G:<G:785:8 ' :8C87?8B' E ' J75;' C7?76759' @B' G6 C8B' '6 :A8' = :@' 5' <E:' B7 G< 60' <@' 5;8' C<@B757<@ ' 5; 5' @<' 67A;5 ' J8:8' 5:EC I' <:' G7G8 ' F<I8B' 5;8:87@' @B' J;8@' ;8:' 58:F ' J8:8' A:88B' 5<0' ;8' 5<<I' E ' 7@5<' ;8:' <J@' C; 685' F B8' EG' ' ;EA8' >7:8' ;8 58B' ' A 66<@' <>' F76I0' @B' 5:8 58B' E ' J75;' A8@E7@8' ;< G75 6759$

@' 5;8' F<:@7@A' J8' ><E@B' 5; 5' 5;8' (66<@' B8 ' 7AE7668 ' BR :?8' 68B' J 9' @8 :69' BE8' J8 5' >:<F' 5;8' (6689' <>' (66<7:8 0' @B' 5; 5' 5;8' ?766 A8' <>' <@@8@E75' J ' G6 C8B' M7@' 5;8' 6 558:' ? 6689N' 6F< 5' 8L C569' <GG< 758' 5<' 5;8' !E@C57<@' <>' 5;8' 5J<$

P' ;8' <7@58' B8 ' C:7@ ' 7 ' 6 <' 88@' >:<F' 5;8' 5<G' <>' 5;8' <6' B8' 66<7:8 0' :7 7@A' =<?8' 5;8' <6' BE' & 67=78:$;7 ' 7 ' 5;8' 6<J8 5' 868? 57<@' >:<F' J;7C;' ' ; ?8' 88@' 5;8' C5E 6' EF F75' <>' 5;8' C:7@ $

5 $ ' $ $ <@ 5 ; 8 Q 5 J 8 85 <E5 EG 5 ; 8 (66<@ G 8B ><: ' 57F8 <?8:: G 5E:8 6 @B @B 5 ; 8@ <?8:: ' 5<@9 J 58 B88G69 C ; @D @8668B =9 J 58:C<E: 8 $ 5 $ ' 5 ; 8 5J G:7@C7G 6 7AE7668 ' J8:8 J866 88@ @B 0 =9 5 ; 7 ' 57F80 75 J ' 8?7B8@5 5 ; 5 5 ; 8 E5 ; <: ' <>

' %

' ' *

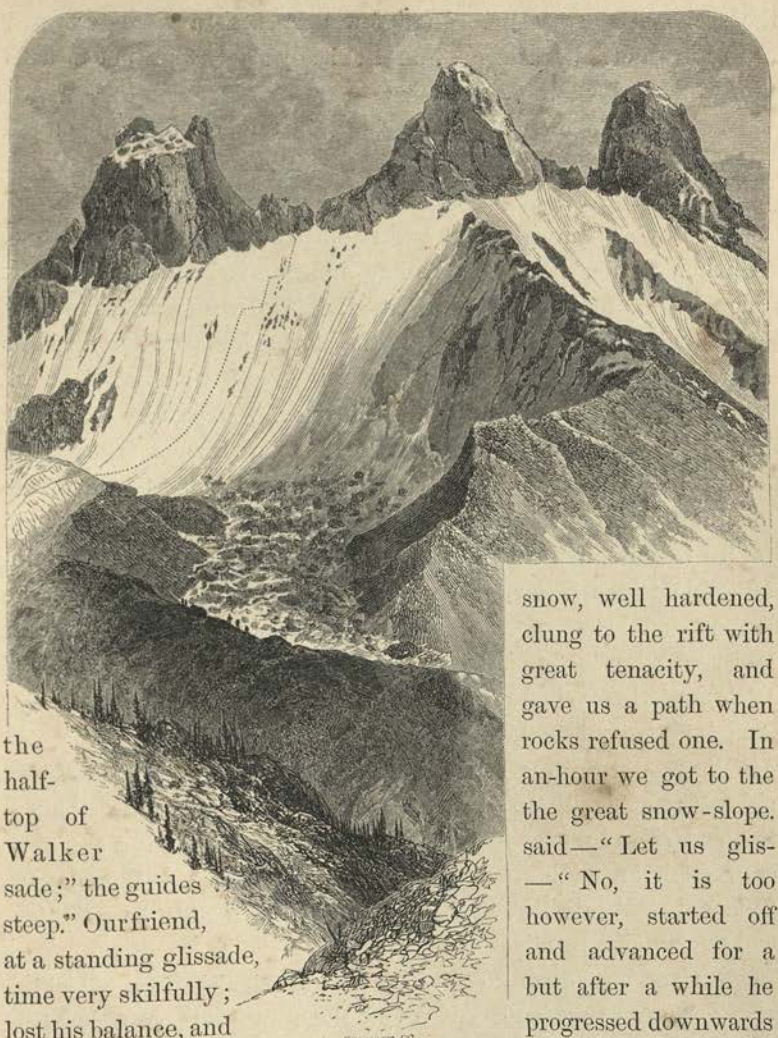
5 ; 8 :B7@7 @ <>>7C7 6 F G ; B :<F @C8B '
8L58@ 7?8690 7@ 5 ; 7 ' @87A ; =<E: ; <<B ' 86 8 '
< ' & (' J67<:<0 75 J ' @8C8 :9 5< ; <6B ' C<E@C76
; : 88 HE8 57<@ ' J8:8 E=F7558B 5< 7 5 [K 47: 5690) ; 7C ; ' 7 ' 5 ; 8
; 7A ; 8 5 <> 5 ; 8 8 7AE7668 ' ^ 8C<@B690) 677C ; ' ; 66 J8 A< EG ^
; 7:B690 < J ' 7 ' 75 5< =8 B<@8 ^
; 8 4 :8@C ; ' 8@A7@88 : 0 75 J ' 7B0 ; B B858 : F7@8B 5 ; 5 5 ; 8 5J<
; 7A ; 8 5 <> 5 ; 8 F ' J8:8 : 8 G8C57?869 0 ' @B 0 Q ' >885 7@ ; 87A ; 50
=E5 J"8 J8:8 J75 ; <E5 7@><: F 57<@ ' 5< J ; 7C ; ' 5J< 5 ; 89 ; B F8 D
E:8B$P . < @@8 7@B88B 7B M=E5 J75 ; <E5 G8C7>97@A J ; 85 ; 8 : ; 8
F8 @5 /' 5 ; : 88N 5 ; 5 5 ; 8 7AE7668 ' ; B =88@ 8?8: 6 57F8 ' C8@B8B0
@B G :57CE6 :69 F8@57<@8B 5 ; 5 5 ; 8 <@8 <> 0 ' >885 J ' Z :86 D
57?869 8 9$3
) 8 5 ; 8 : 8><: 8 7B0 Z) 8 J766 A< EG 5 ; 8 G8 I ' <> 0 Q ' >885$3
E5 5 ; 5 5 +58 : F 7@ 57<@ ' B7B @<5 85568 5 ; 8 8C<@B HE8 57<@$. < @@8R '
Z :86 57?869 8 9 3 G8 I 0 CC<: B7@A 5< ; 7 ' B8 C:7G57<@0 J ' 8?7B8@569
5 ; 8 F < 5 @<: 5 ; 8 : @ <> 5 ; 8 5 ; : 88$ $ 'G8 I ' 5 ; 8@ J ' 5< =8 <@8 <> 5 ; 8

P 5 ; <E6B =8 <= 87 ?8B 5 ; 5 5 ; 8 8 F <E@5 7@ ' J8:8 7@C6EB8B 7@ 5 ; 8 58 : :75<:9 :8D
C8@569 C8B8B 5< : @C8$; 8 : B7@7 @ F G =<?8 :8>8 : :8B 5< J ' 5 ; 8 <6B <>>7C7 6
F G$; 8 4 :8@C ; ' 2 ' 66EB8B 5< >58 : J :B ' 7 ' 5 ; 8 E:?89 7@ C<@57@E 57<@ <> 5 ; 8
A:8 5 4 :8@C ; ' <>>7C7 6 F G$; 8 ; 885 M%<$ 1 N J ; 7C ; ' J766 7@C6EB8 5 ; 8 7AE7668 '
BR :?8 7 ' @<5 985 GE=67 ; 8B$

<5;8:'5J<'0K +=E5 J ;7C;'<>'5;8F'^) 8' J8:8'7@C67@8B'5<'> ?<E:'5;8' C8@5: 6' <@8'0 =E5'75' J ' ; :B'5<'B858:F7@80'5;89'$6<<I8B' <'8HE 6'7@' ;87A;5$);8@0' ;<J8?8:0'5;8'C<E@C76'C F8'5<' 5EB9'5;8'5;7:B'HE8 D 57<@KZ <J'7'75'5<'=8'B<@8^3 75' J 'E@ @7F<E 69'?<58B'5; 5'EG<@' 5;8'8 58:@' @B' <E5;8:@' 7B8'75' J 'C8:5 7@69' :86 57?869'B7>>7CE650' @B'5; 5' 'F<?8' ;<E6B'=8'F B8':<E@B'5<'5;8'@<:5;8:@' 7B8$

;8'F<?8F8@5' J 'BE69' 8L8CE58B0' @B' >58:' J B7@A'EG' <F8' @<J 6<G8'<>'C<@ 7B8:=68' 588G@8 'MA<7@A'<CC 7<@ 669'=89<@B' 2 `N0' J8'><E@B'<E:86?8'7@' 'A G'<:'@7CI0'=85J88@'5;8'C8@5: 6' @B' @<:5;8:@F< 5' 7AE7/80' 5' $2' $ $) 8'5;8@' 5EB78B'5;8'@<:5;8:@' > C8'<>'<E:'7@58@B8B'G8 I0' @B'>7@ 669' ::7?8B' 5'5;8'C<@C6E 7<@'5; 5' 75' J ':86 57?869'7FG:C57C =68$:<S' ;:EAA8B';7'=7A' ;<E6B8:0' @B' 7B0'Z 9'>75;'' '5;7@I'9<E'J766'B<'J866'5<'68 ?8'75'5<'<5;8:$3 7F8:'J 'F<:8'8LG67C750' @B'?<6E@588:8B'5;8'7@><:F 57<@'5; 5''5;<ED @B'>: @C'J<E6B'@<5'58FG5';7F'5<' '75$) 8'5;8@'5E:@8B'5<'5;8' @<:5;8:@F< 5'G8 I0'=E5'><E@B'75' <E5;8:@'>C8'8?8@'F<:8';<G8D 68 '5; @'5;8'@<:5;8:@'>C8'<>'5;8'C8@5:6'<@8$) 8'8@!<98B' CC<:B7@A69'5;8'E@J<@58B'6ELE:9'<>''5;:88 ;<E:R:8 5'<@'5;8'5<G'<>' <E:'G '0><:'G ' J8'J8:8'B858:F7@8B'75' ;<E6B'=8$

) 8'F7A;5' ; ?8'B<@8'J<:8$) 8'J8:8' 0 '<:' 02 '>885' =<?8'5;8'68?86'<>'5;8' 8 0' @B'C<FF @B8B' 'F< 5'G7C5E:8 HE8'?78J' <>'5;8'F<E@5 7@'<>'5;8' :8@5 7 80' J;768'0' <F8J; 5'8 5'<>' <E5;0' J8' J'5;8'F<@ :C;'<>'5;8'' EG;7@B' &'J;< 8'C6< 8:' CHE 7@5D @C8'75'J '<E:'7@58@57<@'5<'F I8$;:88' E@@9';<E:'G 8B' J 90' @B'5;8@'J8'5E:@8B'5<'5;8'B8 C8@5$) 8' J'5;8'B7 5 @5'G 5E:8'<>' '? 6689'MJ;7C;'J8' EGG< 8B'J '5;8'(66<@'<:' ?7@8'B8'6 ' E 8N0' @B' '6<@A' @<J 6<G8'68 B7@A'B<J@'5<'5;8F$ E5'>:<F'5; 5' 6<G8'J8' J8:8'CE5'<>>'=9'G:8C7G75<E' :<CI0' @B' <E:'>7:5'7FD G:8 7<@'J '5; 5'J8' ;<E6B'; ?8'5<':85E:@'7@'<E:'5: CI$ <F8' :E@@7@A'EG' @B'B<J@0';<J8?8:0'B7 C<?8:8B'5J<'675568'A7B678 0'>7668B' J75;'5;:8 B'<>' @<J0' @B'B<J@'5;8'F<5'@<:5;8:@'<>'5;8 8'J8' B8C7B8B'5<'A<$ 5'J ' '588G'J 9'=E5' >8'<@80'><:'5;8'C68>5'J ' <@ ::<J'5; 5'J8'C<E6B'G:8'5;8' ;<E6B8:'A 7@ 5'<@8'7B8'J;76 5' 5;8'>885'J8:8'A 7@ 5'5;8'<5;8:0' @B'5;8'6 5':8F@ @5'<>'5;8'J7@58:R



THE AIGUILLES D'ARVE, FROM ABOVE THE CHALETS OF RIEU BLANC.

the half-top of Walker sade;" the guides steep." Our friend, at a standing glissade, time very skilfully; lost his balance, and and backwards with way that seemed to tumbling head over heels. He let go his axe, and left it behind, but it overtook him and batted him heartily. He and it travelled in this fashion for some hundreds of feet, and at last subsided into snow, well hardened, clung to the rift with great tenacity, and gave us a path when rocks refused one. In an hour we got to the the great snow-slope. said—"Let us glis- —"No, it is too however, started off and advanced for a but after a while he progressed downwards great rapidity, in a us very much like

5;8' :<CI ' 5' 5;8' =<55<F$ @' '>8J' F<F8@5 ' J8' (8:8' :8 E:8B'
' 5<' ;7 ' >859Ø'=9' ;8 :7@A' ;7F' 7:<@7C 669' :8HE8 5' E ' @<5' 5<' I88G'
;7F' J 757@A' B<J@' 5;8:8$

) 8' <5;8: '><66<J8B' 5;8' 5: CI' ;<J@'=9'5;8' B<558B' 67@8' EG<@' 5;8'
8@A: ?7@A' MF I7@A' S7AS A ' 5<' ?<7B' 5;8' 675568' A7R<EG ' <>' :<CI ' J;7C;'
!E558B' 5;:<EA;' 5;8' @<JØ'=9' J;7C;') 6I8:' ; B' =88@' EG 85NØ' B8D
C8@B8B'=9' ' 9 '' A67 B8Ø' @B' :8!<7@8B' <E:' >:78@B' 5' 5;8' =<55<F$
) 8' 5;8@' 5E:@8B' ; :G69' 5<' 5;8' 68>5Ø' @B' 5: FG8B' B<J@' 5;8' EF F75'
:7BA8' <>' @' <6B' F<: 7@8' <>' A:8 5' 7S8$ 5 ' FEB' J ' 8LC8 7?869'
; :BØ' @B' J;8:8' <F8' 6 :A8' 8:: 57C'=6<CI ' 6 9' G8:C;8B' EG<@' 75 '
C:8 5Ø' J8' J8:8' <=67A8B' 5<' CE5' 58G ' M7@' 5;8' FEBN' J75;' <E:' 7C8 L8 $
&E7B8B'=9'5;8' <E@B' <>' ' B7 5 @5' Ć F<<0R J8' G88B769' ><E@B' 5;8'
;7A;8 5' C; 685 ' 7@' 5678' ? 6689Ø' @ F8B' 78E' 6 @C$;89' J8:8'
58@ @58B'=9'5;:88' <6B' J<F8@' MJ;<' 88F8B' 5<' =86<@A' 5<' <@8' <>' 5;8'
F7 7@A' 67@I ' <EA;5'=9'@ 5E: 67 5 NØ' B8 575E58' <>' 66' 7B8 ' 8LC8G5' 7@'
:8A :B' 5<' C<J Ø' @B' J;<' G<I8' ' = := :<E ' G 5<7 Ø' J866 @7A;' E@7@D
5866 7A7=68' 5<' 5;8' ?<9 :B' :<S$ 6789' J<E6B' @<5' =8678?8' 5;5' 5' J8'
; B' G 8B' =85J88@' 5;8' 7AE7668 0K Z' 5' 7 ' 7F G< 7=68Ø' 5;8' 2 '
@8?8:' A<' 5;8:8$3 Z' <E6B' J8' A85' 5<' ' &: ?8' <?8:' 9<@B8:' :7BA8' ^3
Z' ;' 98 ' ' 5;8' ' <>58@' C:< 8B' <E6B' 5;89' ;<J' E ' 5;8' J 9' ^
%<' Ø'=E5' J8' C<E6B' ><66<J' 5;8' =

) 8' 5 98B' ' J;768' @8 :' 5;8 8' C; 685 Ø' 5<' 8L F7@8' 5;8' J8 58:@'
7B8 ' <>' 5;8' 7AEW68 ' BR :?8Ø' @BØ' CC<:B7@A' 5<' <E:' E@758B' <G7@7<@Ø'
5;8' C8@5: 6' <@8' J ' ' 7@ CC8 7=68' >:<F' 5;7 ' B7:8C57<@' ' >:<F' 5;8'
8 5Ø' @<:5;Ø' <:' <E5;$ @' 5;8' ><66<J7@A' B 9' J8' J' 5;8F' A 7@Ø'
>:<F' ' ;87A;5' <>' =<E5' '222' >885Ø' 7@' ' <E5; 8 58:69' B7:8C57<@Ø'
@B' <E:' <G7@7<@' :8F 7@8B' E@C; @A8B$

) 8' J' M<@' .E@8' Q QQN' 5;8' C8@5: 6' 7AE7668' >:<F' 66' 7B8 Ø'
@B' ?8:9' @8 :69' C<FG685869' :<E@B' 5;8' <E5;8:@F< 5' <@8$;8'
@<:5;8:@' <@8' J8' 6 <' J'<@' 66' 7B8 ' 8LC8G57@A' >:<F' 5;8' @<:5;$ M 5'
7 Ø' ;<J8?8:Ø' G:8C7 869' >:<F' 5;7 ' B7:8C57<@' " $.< @@8' 9 ' 5; 5' 75 '
C8@5' 7 ' :86 57?869' 8 9$N') 8' B<' @<5Ø' 5;8:8><:8Ø' ?8@5E:8' 5<' 8LG:8 '
@9' <G7@7<@' :8 G8C57@A' 75 ' C8@5Ø' 8LC8G5' ' :8A :B ' 75 ' C5E 6'
EF F75$;7 ' 7 ' ><:F8B' <>' 5J<' CE:7<E ' G:<@A Ø' <:' G7@@ C68 '" <>

k E: <=!8C5 @<J J 5< C:< 5< & : ?8 M<@ 5;8 ;7A;: <B >:<F & :8@<=68 5< :7 @ <@N @B 5< C8@B 2 <F8 G<7@5 E>>7C78@569 ;7A;5< A7?8 E A<<B ?78J <> 5;8 ' EG;7@8 6G 7@ A8@8: 6 @B <> 5;8 A: @B C; 7@ <> 5;8 87!8 7@ G :57CE6 :$ 8><:8 68 ?7@A @A6 @B C :8>E6 5EB9 <> ć . < @@8R ; B 867C758B 5;8 > C5 5; 5 5;8 ;<:58 5 :<E58 >:<F E 8 5< & : ?8 J =9 5;8 <6 B8 :57A@ :8 0 @B 6 < 5; 5 >:<F 5;8 ><:8 7B <6 75 J G< 7=68 5< C8@B 6<>59 EF F750 C 668B =9 ;7F 5;8 8C BE &:8@78:0 6 < C 668B 7AE7668 B8 &<68<@$ @ :8>8::7@A0 ;<J8?8:0 5< 5;8 :B7@7 @ E:?89 J8><E@B 5;8:8 B8G7C58B0 5< 5;8 8 5 <> 5;8 <6 B8 :57A@ :80 @<5 G8 I =8 :7@A 5;8 =<?8 9 @ F8 0 =E5 9 2 C <@8K !E 5 =<?8 5;8 <6K 5;8 8C BE &:8@78: M5;8 ;87A;5 <> J ;7C; J @<5 5 58BN0 5;8 <5;8:0 5766 > :5;8: 5< 5;8 8 50 @B <F8J; 5 5< 5;8 <E5;<> 5;8 J 58: ;8BK 5;8 7AE>768 BE &<68<@ M 0Q @A67 ;>885 7@ ;87A;5N0 J75; ?8:9 C<@ 7B8: =68 A6 C78: K 5;8 &6 C78: <F= :BK =85J88@ 5;8 5J<$ @ 5;8 4:8@C; F G0P <@ 5;8 <5;8: ; @B0 @875;8: <> 5;8 =<?8 @ F8 J 5< =8 ><E@B0 =E5 G8 I C 668B 7AE7668 B8 6 E 8 M 0 1 >885N0 J G6 C8B 7@ 5;8 G< 757<@ 7A@8B 5< 5;8 8C BE &:8@78: 7@ 5;8 :D B7@7 @ F G0 J;768 >:5;8: 5< 5;8 8 5 J 8C<@B @B @ F868 G8 I M 0 2 N0 @<5 5 66 7@ 5;8 G< 757<@ A7?8@ 5< 5;8 7AE7/8 BE &<68<@0 <> J;7C; @B <> 5;8 &6 C78: <F= :B 5;8:8 J @<5 7A@$ 66 5;7 J ?8:9 GESS;@A @B E@ 57 > C5<:90 =E5 J8 ; B @< B<E=5 <> =87@A 68 5< C67F =<@8 <> 5;8 G<7@5 5< 5;8 8 5 <> 5;8 <6 B8 :57A@ :8 MJ;7C; <?8:;E@A 5;8 ?7@8 B8 6 E 8N0 J8 B858:D F7@8B 5< F I8 5; 5 C<6 5;8 = 7 > <E: <G8: 57<@ $X >P

J 766 5866 9<E0 5; 5 J : 9 F<E@5 7@ F<E@5 7@ 5; 5 9<E J 5 E 8 0 5;89 J8:8 C<J ;E@B:8B <> 5;8 F 65<A85;8:$3 Z) ;90 9<E :8 :7C; $3 $ Z D =69 :7C; $; ?8 @<5;8: F<E@5 7@ <@ 5;8 <6 BE & 67=78:0 @B @<5;8: 5 (7668 @8E?8$3 8 M 65;<EA; C<F F<@ G8 5 7@ <E5J :B GG8 : @C8N C<@>8 8B 5< =87@A J<:5; ><E: 5;<E @B G<E@B $

P) 8 ; B 88@ 5: C7@A >:<F 5;8 E@GE=67 ;8B ;885 <> 5;8 4:8@C; &<?8:@F8@5 E:?89$

_ ;8 =: CI858B G : A: G; 7@ ; G 0 ?777$ 7L$ @B L$:8 8L5: C58B >:<F 5;8 .<E:@ 6 <> :$ $) $ <<:8$

5 J<E6B =8 E@7@58:8 57@A @B E@G:<>75 =68 5< 8@58: 7@5< B7 CE 7<@ <> 5;8 C<@

) 8 68>5 5;8 C; 685 5 2$ $ 2 kE@B8: ;<J8:<> A<<B J7 ;8 >:<F <E:;< 58 8 X G:<C88B8B 5 >7: 5 5<J :B 5;8 EGG8: 8@B <> 5;8 : ?7@8 5;8@ B<E=68B ; CI EG 6<@A =E55:8 J;7C;G:<!8C5 7@ @ E@E E J 9 @B J8@5 5<J :B 5;8 <6 B8 :57A@ :8 =E5 =8><:8 @?7@A 5 75 EFF75 J8 A 7@ B<E=68B @B :8 EF8B 5;8 <:7A7@ 6 C<E: 8$P 5 $ $ J8 5<<B <@ 5;8 J 58: ;8B @B ><6D 6<J8B 75 5<J :B 5;8 8 50 I88G7@A><: <F8 B7 5 @C8 5:7C569 5< 5;8 :7BA8 @B >58:J :B B7?8:A7@A 675568 5< 5;8 <E5; 5< ?<7B C<@D 7B8: =68 8C<@B :9 7AE7668 J;7C;G:8?8@58B 5: 7A;5 5: CI =87@A F B8 5< 5;8 EF F75 5 J;7C;J8 J8:8 7F7@A$ 5 $ J8 5<<B <@ 75 5<G @B J 5 <@C8 5;8 6 9 <> 5;8 6 @B$

) 8 ><E@B 5; 5 <E:G8 I J <@8 <> ><E: J;7C;8@C6< 8B G6 D 58 E 5; 5 J >7/8B =9 A6 C78:$ 85 E C 66 5;8 8 EF F75 o M 88 G6 @ <@G$ N$) 8 5<<B EG<@1 J;7C;J 6F< 5 8L C569 5;8 F8 868? 57<@ o =E5 J ;7A;8:5; @ @B 6<J8: 5; @ 8 I J 5;8 ;7A;8 5 <> 5;8 ><E: @B J =<E5 Q >885 ;7A;8:5; @ . @B J8 7B8@57>78B 75 5;8 7AE7668 B8 &<68B@ M4:8@C;E:?89 0Q >885N$ 8 I J8 C<@ 7B8:8B J 5;8 8C BE &:8@78: @B 7@ B8> E65 <> <5;8:@ F8 J8 C 668B o @B 1 5;8 7AE7668 B8 6 E 8$;8 A6 C78: >6<J8B 7@ <E5; 8 58:69 B7:8C57<@ @B J 5;8 &6 C78: <F= :B$

8 I o @B *<?8:;E@A 5;8 ?7@8 B8 6 E 8 @B J8:8 C<@@8C58B J75; @<5;8: 7AE7668 K K J;7C;B7B 5;8 F8$ C<@D 57@E 57<@ <> 5;8 :7BA8 <E5 <> J;7C;5;8 8 5;:88 7AEB68 :< 8 !<7@8B 5;8 7AE7668 BR :?8$;8 ;8 B <> 5;8 ?7@8 B8 6 E 8 J 5;8:8><:8 8@C7:C68B =9 7L G8 I 0 5;:88 <> J;7C;75 J C<@?8@78@5 5< 58:F 5;8 7AE7668 B8 6 E 80 @B 5;8 <5;8: J8:8 5;8 7A7:B68 BR :?8$

) 8 J8:8 ?8:9 ><:5E@ 58 7@ 5;8 868C57<@ <> <E: EF F75$ <5 5<

>E 7<@ <> 5;8 8 @ F8 5 A:8 58:68@A5;$ 5 7 E>>7C78@5 5< 9 5; 5 5;89 J8:8 C<@><E@B8B 7@ F< 5 G8:G68L7@A F @@8: =9 66 5;8 E5;<:7578 J8 J8:8 =68 5< C<@ E65 @B 6 <=9 5;8@ 57?8 <@ 5;8 G<5$

P A:8 5 G :5 <> 5;7 F<:@7@AR :<E58 68B <?8: ; 68 0 J;7C; J8:8 6<< 8 @B 5:<E=68 <F8 @B J"8:8 G:<= =69 C<@57@E 57<@ <> 5;8 J866 I@<J@ =8B <>5;8 <6 BE & 67=7<: @B 5;8 <6 B8 E5 :85$

G8 I' <> <5 ; 8 :' 5 ; 7@A 0 75' A ?8' ' A: @B' ?78 J' <> 5 ; 8' :7BA8' J ; 7C ;' CE6D F7@ 58 ' 7@' 5 ; 8' G8 I' C 668B' ' 87!8' M 0 ' >885N0 J ; 7C ;' E 8B' 5< =8 F8@57<@8B' =9' 5: ?8668: ' E@B8 :' 5 ; 8' @ F8' 7AE7668' BE' 7B0 B8' 6 ' &: ?8$; 8' ?78 J' <> 5 ; 7 ' F <E@5 7@' >: <F' 5 ; 8' ?766 A8' <> ' &: ?8 75 86>' C @' ; :B69' =8' G: 7 8B' 5<< ; 7A ; 690 K 75' 7 ' <@8' <> 5 ; 8' ?8 :9' >7@8 5 :< B ?78 J ' 7@' 5 ; 8' 6G $; 8' :568 :' G75S' >: <F' 5 ; 8' 586?7< 7 0 7@' > C50 75 ' <@69' J <: 5 ; 9' C< F G8575<:' 0 @B' 5 ; 8' <G7@7<@ ' A8@8: 669' <> 5 ; < 8' J ; < ; ?8' 88@' 5 ; 8' 5 J < ?78 J ' :8' 7@' > ?<E:' <> 5 ; 8' >: F8:$ E5' >: <F' ' &: ?8' <@8' C @' @< @7<:8' GG:8C7 58' 5 ; 8' @<=68' G:<G<:57<@ ' @B' 5 ; 8' 5< J 8:7@A' ; 87A ; 5' <> 5 ; 8' 87!80' 5 ; @' E@B8: 5 @B' 5 ; 8' 9F F85:9' <> 5 ; 8' B< F 8' <> 5$ E6 ' =9' A S7@A' EG<@' 75' >: <F' 5 ; 8' C ; E:C ; 9 :B$ < 88' 75' > 7:690 <@8' F E 5' ; 8' G6 C8B' 5' 'A:8 58:' B7 5 @C8' @B' 5' 'A:8 58:' ; 87A ; 5$ ' ; 66' @<5' 5:9' 5< B8 C:7=8' 5 ; 8' 87!8$; 8' F8' J<:B 0 @B' 5 ; 8' F8' G ; : 8 0 ; ?8' 5< B< BE59' ><:' <@8' @B' @<5 ; 8:' F <E@5 7@' < 5 ; 87:' :8G85757<@' =8C< F 8 ' J 8 :7 < F8' 0 @B' R57 ' ' B7 C<E: A7@A' > C5' 5 ; 5' @9' B8 C:7G57<@0' ; < J 8?8:' 5: E8' <:' ; < J 8?8:' 86 =<: 58B0' 86B< F' <:' @8?8:' A7?8 ' @' 7B8 ' <> 5 ; 8' :8 6759$

85' 5 ; 8' 87!8' B8 8:?8 ' F <:8' 5 ; @' ' G 7@A' @<57C8$ 5' 7 ' 5 ; 8' 6 5K 5 ; 8' <@69 K A:8 5' 6G7@8' G8 I' J ; 7C ;' ; ' @8?8:' I@< J @' 5 ; 8' ><<5' <> F @0' @B' <@8' C @@<5' G8 I' 7@' 8L AA8: 58B' 58: F ' <> 75 ' ! AA8B' :7BA8 0' 5<: :8@57 6' A6 C78: 0' @B' 5:8F8@B<E ' G:8C7G7C8 $P' E5' J8:8'

P' ;8' :7BA8' C 668B' ' 87!8' :E@ ' >: <6@' $ $ $' 5<') $%"$R) R0' @B' 7 ' C:<J@8B' =9' @E F8:<E$ ' 7AE7668 ' <> 5<68: =69' 8HE 6' B8: 57<@$' ;8' 5 J <' ; 7A ; 8 5' :8' 5<J :B ' 5 ; 8' 8 58:@' @B' J 8 58:@' 8@B ' <> 5 ; 8' :7BA80' @B' 5<8' : 5 ; 8:' F <:8' 5 ; @' ' F768' G :5$ <' 5 ; 8' >< : F8:' 5 ; 8' 4 :8@C ;' E:?89<: ' 7A@' ' ; 87A ; 5' <> Q01 0' @B' 5<' 5 ; 8' 6 558:' 0 ' >885$ @' <E:' <G7@7<@' 5 ; 8') 8 58:@' 7AE7668' C @' ; :B69' =8' F <:8' 5 ; @' Q '>885' ; 7A ; 8:' 5 ; @' 5 ; 8' 8 58:@' <@8$ 5' 7 'G< 7=68' 5 ; 5' 75 ' ; 87A ; 5' F 9' ; ?8' B7 F7@7 ; 8B' 7@C8' 75' J ' F8 E:8B$

@' ' ' C :8>E669' 8L F7@8B' 5 ; 8' 8 58:@' 8@B' <> 5 ; 8' :7BA8' >: <F' 5 ; 8' 5<G' <> 5 ; 8' <6 B8' E5 :850' @B' $ J' 5 ; 5' 5 ; 8' E F F75' 5' 5 ; 5' 8@B' C @' =8' C8@B8B' =9' >< 66< J 7@A' ' 6<@A' A6 C78:' J ; 7C ;' B8 C8@B ' >: <F' 75' 5<J :B ' 5 ; 8' %$ $' 7@5<' 5 ; 8' ? 6689' <> ' : 7@8$; 8' ; 7A ; 8 5' E F F75' F 9' G:8 8@5' B7>>7CE6578 0' =E5' 7 ' G< 7=69' CC8 7=68$ @9' 558 F G5 ' EG<@' 75' F E 5' =8' F B8' >: <F' 5 ; 8' @<:5 ; 8:@' 7B8' M 88' G$ N$

; 885' ' <> 5 ; 8' 4 :8@C ;' F G' 7 ' 8L5:8 F 869' 7@ CCE: 58' 7@' 5 ; 8' @87A ; =<E: ; << B' <> 5 ; 8' 87!80' @B' G :57CE6 :69' < <@' 75 ' @<:5 ; 8:@' 7B8$; 8' :7BA8 ' @B' A6 C78: ' J ; 7C ;' :8' 6 7B' B< J @' EG<@' 75' C @' C :C869' =8' 7B8@57>78B' <@' 5 ; 8' G<5$

5 B7 C<E: 8 EG<@ 5;8 8 5;7@A ' J75;<E5 5;8 7B <> !+7C5E:8 0 <:' 5<
8@B8 ?<E:' 5< C<@?89 7@ : ' ' 8@ 8 <> 5;8 6<?867@8 ' <> 2 ' <>
5;8 ;8 E59 <> 2 ' <:' <> 5;8 ; :F<@78 ' <> 2 ' ' ;<E6B 5:9 5<
CC<FG67 ;' 5; 5 J ;7C;' 7 ' 7FG< 7=68 0 @B0 5 5;8 =8 50 ;<E6B ECD
C88B 7@ =E5 A7?7@A @ 7FG:8 7<@ 5; 5 5;8 5;7@A ' G<I8@ <> F 9
; ?8 =88@ G68 @5 5< ;8 :' <:' 5< =8;<6B0 65;<EA;' 5;89 :8 G8:>8C569
7@C<FG:8;8@ 7=68 5< :8 B =<E5$ 85 F8 5;8:8><:8 ?<7B 5;8 8
5;7@A 0 @<5 =8C E 8 ' ; ?8 @< 6<?8 ><:' <:' 5;<EA;5 <> 5;8F0 =E5 =8D
C E 8 5;89 C @@<5 =8 5: @ 6 58B 7@5< 6 @AE A8 0 @B G:8 8@5690
J;8@ 5<G<A: G;7C 6B85 76 ' FE 50 <> @8C8 7590 =8 :85E:@8B 5< A 7@0
' J766 8@B8 ?<E:' 5< :8678?8"5;8 G<?8:59 <> 5;8 G8@ =9 ' >:88 :7 8 <>
5;8 G8@C76$

) ;76 5 J8 5 EG<@ 5;8 7AE7668 B8 6 ' E 80 <E:' 558@57<@ J '
C<@C8@5: 58B <@ ' G<7@5 5; 5 J ' 7F F8B7 5869 <GG< 758 K ' ' A G
<:' C68>5 =85J88@ 5;8 87!8 @B 5;8 F<E@5 7@ C /8M.' 5;8 58 E$
5 J 0 7@B88B0 7@ <:B8:' 5< ; ?8 ' A<<B 78 J <> 5;7 ' G6 C8 5; 5 J8
F B8 5;8 C8@5 <> 5;8 7AE7668$ 5 M5; 5 7 ' 5;8 A G 75 86>N 6<<I8B0
j ' F9 C<FG @7<@ ' :8F :I8B0 <=5:E 7?869 @B <>>8@ 7?869 ' G $
5 ; B @<5 =88@ C:< 8B0 =E5 75 <EA;5 5< ; ?8 =88@ 0 @B 57@ '
88F8B 5< ; ?8 =88@ :8C<A@7 8B =9 5;8 @ 57?8 0 J;< C 668B 750 ?8:9
GG:<G:7 5869 0 5;8 :8C;8 B8 6 ' 87!8$

' ; B 88@ 5;8 G6 C8 7@ 0 @B A 7@ 7@ 0 =E5 ; B @<5
5;8@ 5;<EA;5 =<E5 A8557@A 5;:<EA;' 7 5 0 @B <E:' 7@><:F 57<@ 7@ :8D
G8C5 5< 75 J ' C;78>69 B8:7?8B >:<F' ' G;<5<A: G;7C :8G:<BEC57<@ <>
5;8 5;8@ E@GE=67 ;8B ;885 0 <>5;8 A:8 5 F G <> 4: @C80 J;7C;'
:$ ECI855 0 J75;' ;7 ' E E 6 67=8: 6759 0 ; B G6 C8B 5 <E:' B7 G< 6$
5 J ' 8?7B8@5 >:<F' 5;7 ' F G 5; 5 7>' J8 C<E6B ECC88B 7@ G 7@A
5;8 :58;80 J8 ;<E6B F I8 5;8 F< 5 B7:8C5 :<E58 =85J88@ 5;8?766 A8
<> ' &: ?8 @B 5; 5 <> + : B8 7@ 5;8 ' 8G :5F8@5 <> 5;8 8:80 @B
5; 5;8 B7 5 @C8 =85J88@ 5;8 8 5J< G6 C8 ' =9 5;7 ' :<E580 J<E6B =8
68 ' 5; @ <@8 5;7:B 5; 5 <> 5;8 <:B7@ :9 J 9 ' 5;8 ?766 A8 ' <>
4:8@89 @B (8@< $ 5 F 9 <CCE:' 5< <F8 <> F9 :8 B8: 0 J;9 ; B 75
@<5 =88@ B<@8 =8><:8 ^ 4<:' 5;8 ?8:9 <E@B :8 <@ 5; 5 5;8 ? 6689
<@ 75 ' <E5;8:@ 7B8 M(66<@ B8 ' 5 @d<@ N 7 ' E@7@; =758B0 @B

8: :B8 75 86> 7 ' ' F7 8: =68 ?766 A80 J75;<E5 7@58:8 50 ??75;<E5 C<F F8:C80 @B 6F< 5 J75;<E5 G<GE6 57<@$) ;9 5;8@ B7B 9 ' J7 ;' 5< C:< '75'^ 8C E 8 J8 J8:8 =<E@B 5< 5;8 <7@58 B8 ' C:7@ 0 5< J;7C;' ' B: :B8 J '5;8 @8 :8 5 7@; =758B G6 C8$

);8@ J8 5 EG<@ 5;8 7AE7668 B8 6 ' E 80 J8 J8:8 : 5;8:' B8 G<@B8@5 =<E5 <E:' G:< G8C5 ' <> C:< 7@A 5;8 :8C;80 J;7C;' 88F8B 5< G:8 8@5 ' C<F=7@ 57<@ <> 66 5; 5 J '><:F7B =68$;8:8 E:@ 0 8?7B8@5690 =E5 <@8 J 9 =9 J;7C;' 75 C<E6B =8 GG:< C;8B$)C J 5; 5 5 5;8 5<G <>5;8 G '5;8:8 J ' ' 588G :? 66 <> @<J <:7C8 M < 588G 5; 5 75 J ' F< 5 67I869 7C8N G:<58C58B 5 75 ' = 8 =9 '=7A C;:E@B <:' F< 50 J;7C;' 8?8:8B 75 >:<F 5;8 @<J >786B ' =86<J$;8@ M5: CI7@A <E:' C<E: 8 B<J@J :B N J8 J E@BE6 57@A @<J ' >786B '68 B7@A B<J@ 5< ' A:8 5 A6 C78:$;8 @<J >786B ' J<E6B =8 8 9 J<:I0 =E5 5;8 A6 C78:' J ':7?8@ @B =:<I8@ 7@ 8?8:9 B7:8C57<@0 ;EA8 C:8? 8 ' 88F8B 5< 8L58@B 8@57:869 C:< '75 7@ <F8 G6 C8 0 @B 8?8:9J;8:8 75 ; B 5; 5 5: @A8 5J7 58B 6<<I0 J;7C;' 5866 ' <>5;8 E@8HE 6 F<57<@ <> 5;8 7C8$);8:8 C<E6B J8 A85 <@ 5< 75'^ 5 75 ' = 8 75'C F8 5< '?7<68@5 8@B0 =87@A CE5 ;<:5 =9 ' C67>>0 <?8:' J;7C;' 75 G<E:8B G8:7<B7C 6 ? 6 @C;8 0 ' J8 J ' =9 ' A:8 5 5:7 @AE6 :' =8B <> BB=:7 ' =86<J$) 8 C<E6B @<5 ?8@5E:8 5;8:80K 5;8 A6 C78:' FE 5 =8 5 I8@ 7@ >6 @I$ E5 <@ J;7C;' 7B8'^ %<5 <@ 5;8 J8 50 K @< <@8 C<E6B C67F=' 5;< 8 C67>> $ 5 FE 50 7> @9 J;8:80 =8 =9 5;8 :<CI ' <@ 5;8 8 50 @B $ ' 6<<I8B ' 7> 5;89 J8:8 $ ' 9 .

< J8 ;E::78B B<J@ 5< ' &: ?80 5< ;8 :' J; 5 86C;7<:' @B8L8AA MJ;< ; B !E 5 G 8B 5;:<EA;' 5;8 ?766 A8 J75;' 5;8 > F769 <> <E:' >:78@B) 6I8:N ; B 5< 9 <@ 5;8 F 558:$);< 7 ' 86C;7<:' @B8:8AA'^ ;< 8 J;< $I 5;8 HE8 57<@ C @@<5 ; ?8 =88@ 7@ 6G7@8 J75S8:6 @B0 J;8:8 5;8 @ F8 <> 86C;7<:' 7 ' ' J866 I@<J@ ' 5;8 @ F8 <> % G<68<@$ 86C;7<:0 5<<0 7 ' @ FG8:<:' 7@ ;7 ' J" 9K '?8:9 :7@C8 F<@A'AE7B8 $ 7 '8FG7:8 7 ' F<@A 5 5;8 ¢858:@ 6 @<J 0RK ;7 ' C8G5:8 7 ' @ 7C8 L8$

86C;7<:' @B8:8AA0 F<:8 > F767 :690 @B G8:; G ' F<:8 A8@8D : 669 I@<J@ 7FG69 ' 86C;7<:0 J ' =<:@ 5 V E@0 @8 :

Meiringen, on April 6, 1828. He was first brought into public notice in Hinchcliff's *Summer Months in the Alps,* and was known to very few persons at the time that little work was published. In 1855 he was "Boots" at the Grimsel Hotel, and in those days, when he went out on expeditions, it was for the benefit of his master, the proprietor; Melchior himself only got the *trinkgelt.* In 1856 he migrated to the Schwarenbach Inn on the Gemmi, where he employed his time in carving objects for sale. In 1858 he made numerous expeditions with Messrs. Hinchcliff and Stephen, and proved to his employers that he possessed first-rate skill, indomitable courage, and an admirable character. His position has never been doubtful since that year, and for a long time there has been no guide whose services have been more in request: he is usually engaged a year in advance.

MELCHIOR ANDEREGG IN 1864.

It would be almost an easier task to say what he has not done than to catalogue his achievements. Invariable success attends his arms; he leads his followers to victory, but not to death. I believe that no accident has ever befallen travellers in his charge. Like his friend Almer, he can be called a *safe* man. It is the highest praise that can be given to a first-rate guide.

Early in the afternoon we found ourselves in the little inn at La Grave, on the great Lautaret road, a rickety, tumble-down sort of place, with nothing stable about it, as Moore wittily

:8F :6?8B 8LC8G5 5678 F866$P 86C;7<:; B A<@8 @B ; B 68>5 =8;7@B ' @<58 J;7C;' 7B Z ' 5;7@I' 5;8 G A8 <>5;8 :8C;8'7' GB 7=68 =E5 5; 5 75 J766 =8 ?8:9 B7>>7CE65$3 7 ' <G7@7<@ C<7@C7B8B J75;' <E: @B J8 J8@5 5< 688G 8LG8C57@A 5< =8 ><<5 =<E5 87A;588@ <:5 J8@59 ;<E: ' <@5;8 F<::<J$

5 Q$2 ' 5;8 @8L5 F<:@7@A J8 68>5 ' &: ?8 7@' '>8 J' F7@E58 ' C:< 8B 5;8 <F @C;8 @B 5 2 $ 2 ' A<5 5< 5;8 F<: 7@8 <>5;8 8 58:@ =: @C;' <>5;8 A6 C78:5;5 5 B8 C8@B ' >:<F 5;8 :8C;8$;8 :<CI ' =9 J;7C;' J8 7@58@B8B 5< C8@B J8:8 G6 C8B =85J88@ 5;8 5J< =: @C;8 ' <>5;7 ' A6 C78: @B 5766 6<<I8B F<<5;' @B E@D =:<I8@$ E5 =9 ' <RC6<CI' J8 J8:8 EG<@ 5;8F$) 8 ; B =88@ B86EB8B =9 5;8F$ < C :G8@58:5 C<E6B ; ?8 G6 @@8B ' F<:8 C<@D ?8@78@5 5 7:C 8 ;89 J8:8 ' 2 M '5;87:5 F<<5;' 6<<I':><F ' B7 5 @C8 J ' <@69 <J7@A 5< 5;87:5 7@A7B :5 >7:F@8 $ k 5 J ' :8 669 HE758 ' G68 E:8 5< C 68 EC;' B867A;5>7B :<CI $) 8 >865 5;8 5<@8 ;86B 5;8 =<<5 < J8660 5;5 J75;<E5 F I7@A ' G< 757?8 8>><:5 5< B< <0 75 J<E6B =8 6F< 5 7FG< 7=68 5< 67G$X @ @ ;<E:5 J8 ; B :7 8@ =<?8 5;8 F< 5 C:8? 8B G<:57<@ <>5;8 A6 C78:0 @B =8A @ 5< 6<<I' ><:5 ' J 9 <@ 5< 75 .E 5 5 5;8 :7A;5 G6 C8 5;8:8) ' ' G 5C;' <>5<6B @<J' 5 5;8 7B80 @B0 7@ 58 B <>5 A 7@7@A 5;8 7C8 =9 B8 G8: 58 C:<= 57C >8 5 0 J8 G 8B >:<F 5;8 :<CI ' <@ 5< 75 8 769 ' <@8 J 6I ' C:< ' ' A @AJ 9 5 ; 6> G 5 ' J8 J8:8 <@ 5;8 C8@5:8 <>5;8 A6 C78:0 @B 5;8 7@; =75 @5 ' <> ' &: ?8 5E:@8B <E5 8@ ! ' 7@5< 5;8 :< B0 @B J 5C;8B E ' J75;' F S8D F8@5 ' 5;89 J75@8 8B 5;8 > 6 7>7C 57<@ <>5;87:5 C<@>7B8@5 G:8B7CD 57<@ $) 866 F7A;5 5;89 5 :80 ><:5 <E:5 675568 C : ? @0 6<<I7@A 5< 5;8F 67I8 ' 5: 7@ <>5>678 ' <@ ' J 660 C:8G5 EG @B EG0 J75;<E5

P 6!8 !E 5@8 ' <>5;8 <= 8:? 57<@ J766 =8 >865 =9 5;< 8 J;<I@8J ' &: ?8 7@ <:5 =8><:8 2$ 5 5; 5 57F8 5;8 ;<:mm ' <>5;8 C<E:78: ' J;< J8:8 G 7@A >:<F &:8@<=68 5< :7 @+<@0 @B ' E)8:8 6<BA8B 7F F8B7 5869 E@B8:@8 5;5;8 668 F @A8:5 @B =8B:<<F 0 @B 'GE@A8@50 58 F9<B<E:5:< 8 >:<F 5;8F 5;:<EA;5;8 C: CI '7@5;8 >6<<:0 @B C<@ 5 @569 G8:? B8B 5;8 J;<68 ;<E 8$ ' F 5<6B 5; 5 5;8 7@@ ; ' =88@ 7FG:<?8B 7@C8 2$

' E:5 :<E58 >:<F ' &: ?8 5< ' 8: :B8 J766 =8 88@ <@ 5;8 CC<FG @97@A F G$

hesitation and without a halt—lost to their sight one minute as it dived into a crevasse, then seen again clambering up the other side. The higher we rose the easier became the work, the angles lessened, and our pace increased. The snow remained shadowed, and we walked as easily as on a high road; and when (at 7.45) the summit of the Brèche was seen, we rushed at it as furiously as if it had been a breach in the wall of a fortress, carried the moat by a dash, with a push behind and a pull before, stormed the steep slope above, and at 8.50 stood in the little gap, 11,054 feet above the level of the sea. The Brèche was won. Well might they stare; five hours and a quarter had sufficed for 6500 feet of ascent.* We screamed triumphantly as they turned in to breakfast.

SCALE, THREE MILES TO AN INCH.

All mountaineers know how valuable it is to study beforehand an intended route over new ground from a height at some distance. None but blunderers fail to do so, if it is possible; and one cannot do so too thoroughly. As a rule, the closer one approaches underneath a summit, the more difficult it is to pick out a path with judgment. Inferior peaks seem unduly important, subordinate ridges are exalted, and slopes conceal points beyond; and if one blindly undertakes an ascent, without having acquired a tolerable notion of the relative importance of the parts, and of their positions to one another, it will be miraculous if great difficulties are not encountered.

But although the examination of an intended route from a height at a distance will tell one (who knows the meaning of the

* Taking one kind of work with another, a thousand feet of height per hour is about as much as is usually accomplished on great Alpine ascents.

)75 %&)' ( ) ' *&' %+) 6# / *

5;7@A ' ;8'7 '6<<I7@A' 5N' 'A<<B'B8 60' @B'J766'8@ =68' ;7F'5<' 588:' C68 :'<>'F @9'B7>>7CE6578 ' A 7@ 5'J;7C;';8'F7A;5'<5;8:J7 80'=67@B69' :E@0'75' J766' 86B<F' 66<J'<@8'5<'G:<@<E@C8'G< 757?869'EG<@'5;8' G:C57C =76759'<:'7FG:C57C =76759'<>'5;8'J;<68'<>'5;8':<E58$ %<' 67?7@A'F @0'><:'8L FG680'C @'G:<@<E@C8'G< 757?869'>:<F' 'B75@C8' 7@':8A :B'5<':<CI $;<8'!E5'F8@57<@8B':8' @'766E5: 57<@'<>'5;7$ $;:88'<>'5;8' =685' @B'F<5'8LG8:78@C8B'AE7B8 'C<@CE::8B'7@'5;7@ID 7@A'5; 5'5;89'J<E6B'=8'><E@B'?8:9'B7>>7CE650' @B'5;89'G:<?8B'5<';8' <>'@<'B7>>7CE659'J; 58?8:$ @'5:E5;0'5;8' <E@B8:' @B'68 '=:<I8@' EG' :8'5;8';<CI 0'5;8'F<:8'7FG:C57C =68'B<'5;89'E E 669'6<<I'>:<F' 'B75@C8'0 J;768' <>5' @B'8 769':8@5' :<CI 0' J;7C;' :8' <>58@' F<@A5'5;8'F<5'B7>>7CE65' @B'G8:76<E'5<'C67F=0'?8:9'>:8HE8@569' 6<<I'>:<F' > :' '7>'5;89'F7A;5'=8'5:?8:8B'=9''C;76B$

5'7'G< 7=68'5<'B8C7B8'J75;'A:8 58:'C8:5 7@59'7@':8A :B'5<'5;8' G:C57C =76759'<>'A6 C78:$ Y);8@'<@8'7'88@'5<';?8'>8J'<G8@'C:8D ? 8'M @B'5;7'F 9'=8'5<6B'>:<F''A:8 5'B7 5 @C8N0'5;8@'J8'I@<J' 5;5'75'7' $$'5<'5:?8:8'750=E5'5<'J;5'8L58@5'750'<:''A6 C78:' 5;5'7'FEC;'=:<I8@'EG'=9'C:8? 8 0'J766'=8'5:<E=68<F80'J766' B8G8@B'EG<@'5;8'J7B5;'@B'68@A5;'<>'5;8'C:8? 8 0'@B'EG<@'5;8' @A68'<>'5;8'E:>C8'<>'5;8'A6 C78:'75 86>$ 'A6 C78:'F 9'=8'A:8 569' C:8? 8B0'=E5'5;8'>7 E:8'F" 9'=8'<@ ::<J'5;5'5;8:8'7'@<'<CC D 7<@'5<'B8?7 58'>:<F''5:7A;5'67@8'J;8@'G 7@A'C:<'5;8F'0<:' 'A6 C78:'F 9';?8'>8J'<G8@'C:8? 8 0'@B'985'F 9'=8'G:C57C 669' 7FG =68'<@'CC<E@5'<>'5;8'588G@8'<>'5;8'@A68'<>'75'E:>C8$ %<F7@ 669'0'F @'J75;'@'L8'C @'A<'@9J;8:8'EG<@'A6 C78:0'=E5' 7@'G:C57C8'75'7'><E@B'5;5'5<'F<?8'>:8869'EG<@'7C8'<@8'FE5';?8' 5<'B8 6'<@69'J75;'F 66'@A68 $ 5'7'5;E'@8C8 :9'5<'I@<J'GD G:<L7F 5869'5;8'@A68'<>'5;8'E:><8'<>''A6 C78:'=8><:8'75'7'G< D 7=68'5<'B858:F7@8'J;85;8:'75'J766' >><:B'8 9'5:?8667@A0'<:'J766'=8' <'B7>>7CE65' '5<'=8'M><:'66'G:C57C 6'GE:G<8N'7FG =68$;7' C @@<5'=8'5<6B'=9'6<<I7@A'5'A6 C78:''7@'>E66'>C8'>:<F''B75@C8'0 5;89'FE5'=8'88@'7@'G:<>768'0 @B'75'7'<>58@'B8 7:=68'5<'8L F7@8' 5;8F'=<5;'>:<F'5;8'>:<@5' @B'7@'G:<>7680K5<'B<'5;8'>7:5'5<'5EB9' 5;8'B7:8C57<@'<>'5;8'C:8? 8 0'5<'@<58'J;8:8'5;89' :8'F<5'@B'68 5

@EF8:<E 0 @B 5;8 8C<@B 5< 88 J;85;8:75 @A68 :8 F<B8: 58 <: A:8 5$;<E6B 5;89 =8 ?8:9 588G0 75 F 9 =8 =8558: 5< ?<7B 5;8F 65<A85;8:0 @B 5< F<E@5 8?8@ =9 B7>>7CE65 :<CI 0 =E5 EG<@ A6 C78: <> ' 7@C67@ 57<@0 @B J75; >8J <G8@ C:8? 8 0 =8558: G:<A:8 C @ 6J 9 =8 F B8 5; @ EG<@ 5;8 :<CI $

< FEC;5< 8LG6 7@ J;9 J8 J8:8 B8C87?8B J;8@ 6<<I7@A 5 5;8 :8C;8 B8 6 87!8 >:<F 5;8 7AE7668 B8 6 E 8$) 8 5<<I@<58 <> 66 5;8 B7>>7CE6578 0 =E5 B7B @<5 G 9 E>>7C78@5 558@57<@ 5< 5;8 B7 5 @C8 5; 5 5;8 :8C;8 J <E5;<> &: ?8$ 9 F8 @7@A J766 =8 GG :8@5 >:<F 5;8 CC<FG @97@A B7 A: F0 47A$ MC<@ 5:EC58B

EG<@ 5;8 B 5 EGG678B =9 5;8 4:8@C;: E:?89<: N0 J;7C;: J766 6 < 8:?8 5< 766E 5: 58 ;<J= B69 @A68 <> 868? 57<@ :8!EBA8B =9 5;8 E@ 7B8B

;8 ?766 A8 <> &: ?8 7 !E 5 >8850 @B 5;8 ;7A;8 5 EFD F75 <> 5;8" 87!8 7 0 >885 =<?8 5;8 68?86 <> 5;8 8 $;8:8 7 5;8:8><:8 B7>>8:8@C8 7@ 5;87:68?86 <> >885$ E5 5;8 EFD F75 <> 5;8 87!8 7 <E5;<> &: ?8 =<E5 201 >8850 @B0 C<@ 8HE8@5690 67@8 B: J@ >:<F &: ?8 5< 5;8 EF F75 <> 5;8 87!8 7 @< 588G8:5; @ 5;8 B<558B 67@8 B: J@ >:<F 5< C$ 47A$ 0 <:0 7@ <5;8:J<:B 0 7> <@8 C<E6B A< 7@ B7:8C5 67@8 >:<F &: ?8 5< 5;8 EF F75 <> 5;8 87!8 5;8 C8@5 J<E6B =8 5 @ @A68 <> 68 5; @ `$ 4 7@8 G8: <@ <E5 <> 58@ J<E6B G:<= =69 8 57F 58 5;8 @A68 <@ 5;8 G<5 5 B<E=68 5;7 F<E@5$P

;8 :8C;8 7 Q >885 =86<J 5;8 EF F75 <> 5;8 87!80 @B <@69 >885 =<?8 &: ?8$ B7:8C5 C8@5 >:<F 5;8 ?766 A8

P 47A$ Q :8G:8 8@5 7@ 7F76 :F @@8:5;8 B7 5 @C8 @B 868? 57<@ <> 5;8 558:D ;<:@ >:<F @B =<?8 V8:F 55$ 88 G$ $

5<' 5;8' :8C;8' J<E6B' C<@ 8HE8@569'=8' 5' @' @A68' <>"@<5' FEC;' F<:8' 5; @' Q `$ E5' 75' 7 ' @<5' G< 7=68' 5<' F I8' 5;8' C8@5' ' 5;8' C:<J' >678 ' 0' 75' ; '5<'=8' F B8'=9' @'7@B7:8C5' @B' FEC;'6<@A8:' :<E58$ E:' 5: CI' J ' G:<= =69' B<E=68' 5;8'68@A5;' <>' ' B7:8C5' ;E8'=85J88@' 5;8' 5J<' G6 C8 $ ' <E=67@A' 5;8'68@A5;' ; 6?8 ' 5;8' @A68 0' @B' J8' 5;8:8D ><:8' ::7?8' 5'5;8' <F8J; 5' F S7@A' C<@C6E 7<@0' 5; 5' EG<@' 5;7 0' <@8' <>'5;8' 588678 5' G 8 ' 7@' 5;8' 6G 0P'5;8' F8 @' <>' 66' 5;8' @A68 ' EG<@' 5;8' C8@5' C<E6B' @<5' ; ?8'=88@' A7B 58:'5; @' ~' <:' Q`$ >'C<E: 80' 7@' <F8'G6 C8 0' 5;8' @A68 ' J8:8' FEC;' 588G8:0' @B' 7@' <5;8: ' 68 0' =E5'5;8' ' <>'5;8' J;<68' C<E6B' @<5' ; ?8' G 8B' 5;8' @A68' =<?8' 7@B7C 58B$

ƒ) 8' B7B' @<5' 5:<E=68' <E: 86?8 ' FEC;' J75;'5;8 8' F 558: ' J;8@' J8' 5' <@'5;8'5<G' <>'5;8' :8C;8$ E:' B 9R' J<:I' J ' ' A<<B' ' <?8:' M><:' J8' I@8J' >:<F' 8 : $ 5;8J ' @B' <@@89'5; 5'5;8:8' J ' @< B7>>7CE659' EG<@' 5;8' <5;8:' 7B8N0' @B' J8' = @B<@8B' <E: 86?8 '5<'8 8' @B'6ELE:9'0' J<@B8:7@A0' 658:@ 5869 0' ' J8' A S8B' EG<@' 5;8' 58 E' @B' 5;8' C:F 0' ;<J' 5;8' <@8' F<E@5 7@' C<E6B' G< 7=69' ;<6B' 75 86>'5<D A85;8:0' @B' J;85;8:' 5;8' <5;8:' J<E6B' ;<6B' <E5' A 7@ 5' E $;8' ><:F8:'6<<I8B'k <' :<558@'5; 5'75' 88F8B' '7>' ' GE>>'<>' J7@B'<:' 'C6 G' <>'5;E@B8:' F7A;5' B ;' 5;8' J;<68'> =:7C' 5<'G78C8 X0' J;768'5;8'6 558:' 8:58B' 75 86>'5;8' F<@ :C;' <>'5;8' A:<EG0' @B' 5<J8:8B' ;8 B' @B' ;<E6B8:' '=<?8' 66' 5;8' :8 5' <>'5;8' G8 I ' J;7C;' ><:F'5;8' A:8 5' ;<: 8 ;<8' <>' ' EG;7@+$ 5'68@A5;' ' C:E8' :E ;' <>' C<6B' 7:' F B8' E ' ;7?8:0' @B' ;7>5' <E:' HE :58: ' 5<' ' 675568' A: 9' G6<50' ' >885' =86<J K @' < 7 ' 7@' ' B8 8:5K J;8:8' J8' 6 9'@8 :69' ><E:' ;<E: ' BD F7:7@A'5;8' G68@B7B' J 66' J;7C;' G:<58C5 '5;8' EF F75' <>'5;8' 87!8' >:<F' E65' EG<@'5;7 ' 7B8$P' ;8@' J8'5: FG8B' B<J@' 5;8' (66<@' B8 ' 5 @+<@ 0' ' ;<J67@A' J76B8:@8 0' 5;8' =<F7@ 57<@' <>' B8 <6 D 57<@'0' B8 575E58' 67I8'<>' @7F 6' <:'?8A85 =68'>7>8'0' G 5;68 0' <>'C<E: 80

P' ;7 ' J 66' F 9'=8'B8 C:7=8B' ' @'8L AA8: 58B'&8F F70' ' 88@'>:<F' 8EI8:= B$ 4:<F'5;8' ;7A;8 5' EF F75' <>' ' 87!8' :7A;5' B<J@'5<'5;8' &6 C78:' B8 ' 5 @ ;<@ ' M ' B8G5;' <>' =<E5' Q ' >885N0' 5;8'C67>>'7 ' 66' =E5'G8:G8@B7CE6 :0' @B' GG8 :' '5<'=8' C<FD G6858 69' E@ 76 =68$;8' B7F8@0 7<@' <>'5;8 8' G A8 ' J8' 7@ E>>7C78@5'5<' B<'!E 57C8' 5<' 5;7 ' F A@7>7C8@5' J 66' J;7C;' 7 ' 5;8' F< 5' 7FG< 7@A' <>' 75 ' I7@B' 5; 5' ' ; ?8' 88@' 0' <5;8:J7 8' 75' J<7BB' ; ?8'=88@' 8@A: ?8B$

suggestive of chaos, but of little else ; covered almost throughout its entire length with débris from the size of a walnut up to that of a house ; in a word, it looked as if half-a-dozen moraines of first-rate dimensions had been carted and shot into it. Our tempers were soured by constant pitfalls [it was impossible to take the eyes

THE VALLON DES ETANÇONS (LOOKING TOWARDS LA BERARDE).*

from the feet, and if an unlucky individual so much as blew his nose, without standing still to perform the operation, the result was either an instantaneous tumble, or a barked shin, or a half-twisted ankle. There was no end to it, and we became more savage at every step, unanimously agreeing that no power on earth would ever induce us to walk up or down this particular valley again]. It was not just to the valley, which was enclosed by noble mountains,—unknown, it is true, but worthy of a great reputation, and

* The drawing was inadvertently made the right way on the wood, and the view is now *reversed* in consequence.

J=7C67 7>G6 C8B 7@ <5;8:'B7 5:7C5 J<E6B ;8 <EA;5 >58:@B C758B '59G8 '<>B :7@A><:F @B A: C8>E6 <E567@8$

%<5 < ?8:9 6<@A A<G8:; G 5;8 (66<@ B8 ' 5 @ <@ ' J<:8 ' F<:8 C;88:>7B G8C5$ 5 7 ' J866 I@<J@ 5; 5 F @9 <>5;8 4:8@C;' 6G7@8 ? 6689 ' ; ?8 : G7B69 B858:7<: 58B 7@ H77758 F<B8:@ 57F8 $ 6 @HE G<7@58B <E5 ' >8J 98 : ' A< <F8 <>5;8 C E 8 ' J;7C;' ; ?8 =:<EA;5 5;7 ' =<E5 7@ @ BB:8 ' 5< 5;8 C B8F9 <> C78@C8 ' @B 65;<EA;' ;7 ' :8F :I ' :8 @<5 8@57:869 GG67C =68 5< 5;7 ' ?8:9 ? 6689 5;8 C; G58:' F 9 ;8 G:<G8779 C6< 8B J75;R <F8 <>;7 ' ?7A<:<E ' 8@58@C8 $ 8 7B Z ;8 =E 8 <>5;8 :7A;5 <> G D 5E: A8 @B 5;8 >86=@A <>5;8 J<<B ; ?8 5:7GG8B 5;8 <76 <> 66 75 ' A: ' @B 66 75 ' 5:88 @B 5;8 C<:C;7@A E@ = I8 ' 75 5< 5;8 C<@ 7 58@C8 <> G<:G;9:9$);8@ F<7 58@8B =9 5;8 : 7@ ' 75 ; ' @875;8:' EGG<:5 @<:' C<;8 7<@ 75 :<66 ' B<J@ 7@5< 5;8 ? 6689 <F8D 57F8 ' 7@ >6<<B ' :8 8F=67@A =6 CI 9866<J <:':8BB7 ;'6 ? @B <F8D 57F8 ' 7@ 5:8 F ' <> G8==68 @B 8?8@ ;EA8 =6<CI ' <> 5<@8 J;7C;' G<E:' B<J@ J75;' ' >:7A;5>E6 :< :$ $ $ $ (5 B8G< 75 ' <> >67@59 G8==68 F @9 >885 7@ 5;7CI@8 J;7C;'; ?8 :<668B B<J@ @B GSRB B > :' <?8:' 5;8 G6 7@ E::<E@B 6 :A8 5:88 =E:9 8?8@ 5;87:' 5<G @B :7 8 =<?8 5;8F$ $ $ $;8 A<:A8 E@B8:' 5;8 7@>6E8@C8 <>5;8 E@ J;7C;' C: CI ' @B ;7?8: ' 5< >: AF8@5 ' 5;8 ?8:9 :<CI @B <>5;8 : 7@ J;7C;' J88G ' 5;8F B<J@ G8@85: 58 B88!S8:' @B B88G8:' 7@5< 5;8 ;8 :5 <>5;8 F<E@5 7@ J;768 5;8 =8B ' <>5;8 5<::8@5 ' 7 E7@A >:<F 5;8F :8 <F857F8 ' : 7 8B 8?8: 6 >885 7@ ' 7@A68 98 :'=9 5;8$ B8=:7 $ $ $ $ @ 7@B7:8C5 G:<<> <>5;8 7@C:8 8 <>5;8 8?76 7 ' 5< =8 ><E@B 7@ 5;8 B8G<GE6 57<@ <>5;8 C<7F5:9$ $ $ $ /@68 ' G7R<FG5 @B 8@8:A857C F8 S7:8 ' :8 5 I8@0 75 7 ' 8 9 5< >7L 5;8 8G<C;' J;8@ 5;8 4:8@C;' 6G ' J766 =8 =E5 ' B8 8:5$ $ $?8:9 98 :' J766 AA: ? 58 5;8 8?760 @B 7@ ; 6> C8@5E:9 4: @C8 J766 C<E@5 F<:8 :E7@ @B ' B8G :5F8@5 5;8 68 $3P

e

WE<58B >:<F : ;R J ' 8E 2

U' T$

' % ' 4' ' % ' ' ' % $

Z 47668B' J7567 (77A67' F<E@5 7@ 0' :8 :7@A' 5 ; 87:' ; 8 B ' '7>' 5<' :8 C ;' 5<' ; 8 ?8@0' C:<J@8B' J75 ;' A6 C78: 0' @B' >7 E:8B' J75 ;' 7 F F 8@ 8' C ; F 0' J ; 8:8' 678' 5 ; 8' 858: @ 6' @<J ' AE :B8B' =9' ; :8' @B' :EAA8B' C67>> ' 0 <>>8:7@A' 5 ; 8' F< 5' ? :78B' 7A ; 5 0' @B' 8@!<97@A' /' 58 F G8: D 5E:8 ' 0 @B' C<@5 7@7@A' 8?8:!7 ; 7@A' 5 ; 5' 7 ' F< 5' CE:7<E ' @B' 7@58:8 57@A0' 5 ; 8' F< 5' 7 F G68' @B' 5 ; 8' F< 5' E=67 F 80' 5 ; 8' F< 5' F767@A' @B' 5 ; 8' F< 5' 8?8:80' 5 ; 8' F< 5' =8 ED 57>E6' @B' 5 ; 8' F< 5' J>E60 EC ;' 7 ' 5 ; 8' B8G :5 F 8@5' <>' 5 ; 8' 7A ;' 6G $3

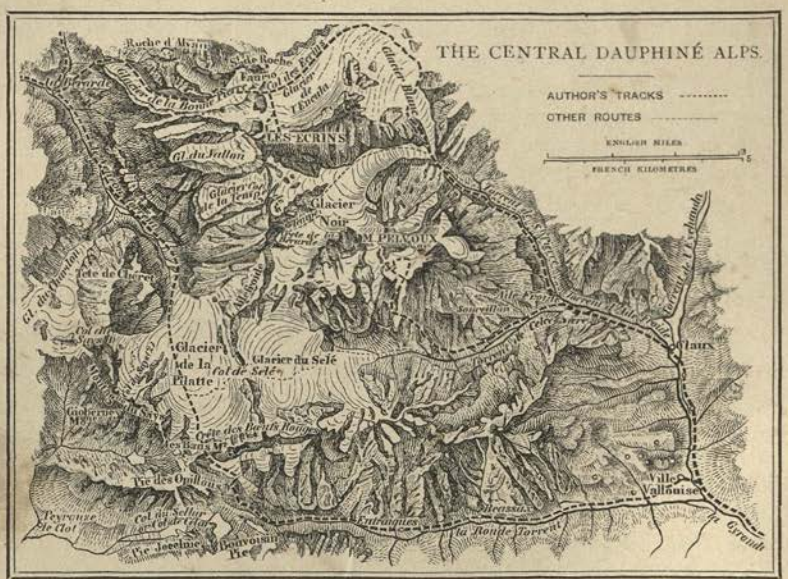
.

6 3 ' ' <RC6<C I' <@' 5 ; 8' >58:@<<@' <>' . E@8' Q 0' J 8' J 8:8' 5:<557@A' B<J@' 5 ; 8' 588G' G 5 ;' 5 ; 5' 68 B ' 7@5<' ' 8: :B8$) 8' GE5' EG0' <>' C<E: 80' J 75 ;' 5 ; 8' C ; 8E: AE7B8' <B78:' MJ ;<0' ' E E 60' J ' F<<5 ;' @B' F 767@AN0' @B0' >58:' C<@A: 5E6 57<@ ' J 8:8' <?8:0' J 8' :85E:@8B' 5<' 5 ; 8' 8L58:7<:' 5<' J 5C ;' >:' 5 ; 8' : :7? 6' <>' <@8' 68L @B8:' 7C0' J ;<' ; B' =88@' 8@5' <?8:@7A ; 5' J 75 ;' <E:' AA A8' ' :8@89' @B' (8@< $ E5' J ; 8@' 5 ; 8' @7A ; 5' >866 0' @B' @<' 7C' GG8 :8B0' J 8' J' 5 ; 5' <E:' G6 @ ' *FE 5' =8' F<B7>78B' 0 ><:' ; 8' J ' @8C8 :9' 5<' <E:' ?8:9' 8L7 58@C8 K ; 8' C : :78B' <E:' ><<B0' <E:' 5<= CC<0' <E:' 66$ <0' >58:' <F 8' B7 CE 7<@0' 75' J ' A7B88B' 5 ; 5' ' G<:57<@' <>' <E:' G:<A: F F 8' ; <E6B' ; 8' = @B<@8B0' 5 ; 5' 5 ; 8' @7A ; 5' <>' 5 ; 8' Q25 ;' ; <E6B' ; 8' G 8B' 5' 5 ; 8' ; 8 B' <>' 5 ; 8' &6 C78:' B8' 6 ' <@@8' 787E80' @B' 5 ; 50' <@' 5 ; 8' Q 5 ;0' ' GE ;' ; <E6B' =8' F B8' ><:' 5 ; 8' EF F75' <>' 5 ; 8' C:7@ $) 8' 5 ; 8@' J 8@5' 5<' 5: J$

E:' G<:58:' 7C' 5:<668B' 7@' @8L5' F<:@7@A' J 75 ;' ; 7 ' E E 6' ! 7F 59' 7:0' @B' J 8' 87S8B' EG<@' <E:' 5<<5 ; =:E ; 8 ' 0 =E50' EG<@' 6<<I 7@A' ><:' 5 ; 8' C7A : 0' J 8' ><E@B' 5 :? 57<@' 5 :7@A' @ ' 7@' 5 ; 8' > C8$ Z' E66<'!' <@ 78E:' 7C0' J ; 8:8' :8' <E:' C7A : ' ^3' ' Z' &8@568 F 8@03' ; 8' =8A @0' Z' ' F' B8 <6 58B 3' @B' 5 ; 8@0' HE758' 0' G 50' ; 8' 5<6B' ' 6<@A' :7A F :<68' =<E5' ' >75' <@' 5 ; 8' :< B0' <>' =:7A @B 0' 5 ; 78?8 0' <>' 5 ; 87:' : @ CI 7@A' 5 ; 8' I@ G Q' '

sacks when he was insensible, and of finding them gone when he revived! "Ah! Monsieur Pic, we see what it is, you have smoked them yourself!" "Gentlemen, I never smoke, *never!*" Whereupon we inquired secretly if he was known to smoke, and found that he was. However, he said that he had never spoken truer words, and perhaps he had not, for he is reported to be the greatest liar in Dauphiné!

We were now able to start, and set out at 1.15 P.M. to bivouac



upon the Glacier de la Bonne Pierre, accompanied by Rodier, who staggered under a load of blankets. Many slopes had to be mounted, and many torrents to be crossed, all of which has been described by Mr. Tuckett.* We, however, avoided the difficulties he experienced with the latter by crossing them high up, where they were subdivided. But when we got on to the moraine on the right bank of the glacier (or, properly speaking, on to one of the moraines, for there are several), mists descended, to our great hindrance; and

* *Alpine Journal*, December 1863.

75 J ' $ ' =8><:8 J8 ::7?8B <@ 5 ;8 G<5 5 J ;7C ;' 75 J ' 7@58@B8B 5< C FG$

C ;' <@8 868C58B ;7 ' @<<I0 @B J8 5 ;8@ !<7@8B :<E@B ' A: @B >7:8 F B8 =9 <E:' F8@$ 4<:5@EF @B <@R ' G<:5 =68 <@G J ' 67C8B EG @B =:8J8B0 @B J ' 8LC8668@50 =E5 75 ;<E6B =8 7B 5; 5 =8><:8 75 9 ' 8LC8668@50 5; :88 57F8 ' 5;8 HE @5759 @ F8B 7@ 5;8 BE8C57<@ ' ; B 5< =8 E 8B$:5 7 ' :8HE7:8B 7@ B:7@I7@A ' 7@ F ID 7@A 5;7 ' <EG0 @B <@8 G<7@5 7 ' 5;7 K 6J 9 ' 685 9<E:' >:78@B ' B:7@I ' >7: 50 @<5 <@69 =8C E 8 75 7 ' F<:8 G<6758 =E5 =8C E 8 5;8 <EG ; ' ' 58@B8@C9 5< =E:@ 5;8 F<E5;' 7>5 I8@ 5<< ;<50 @B <@8 B:7@I ' <> 5;8 =<55< F ' 7 ' J<:5;' 5J< <> 5;8 5<G0 ' /' 5;8 A<<B@8 ' 85568 $

k) ;768 8@A A8B 7@ 5;8 8 <G8: 57<@ 0 5;8 F7 5 5; 5 8@?86<G8B 5;8 A6 C78:' @B E::<E@B7@A G8 I ' J ' =8C<F7@A 5;7@@8:' 0 675568 =75 ' <> =6E8 I9 GG8 :8B ;8:8 @B 5;8:80 E@576 EBB8@69 0 J ;8@ J8 J8:8 6<<I7@A 5<J :B ' 5;8 ;8 B <> 5;8 A6 C78:0 > :0 > :' =<?8 E 0 5 @ 6F< 5 7@C<@C87? =68 ;87A;50 7@ ' 57@9 G 5C;'' <> =6E80 GG8 :8B ' J<@B8:>E6 :<CI9 G7@@ C680 = 5;8B 7@ 5;8 =8 F ' <> 5;8 > 5 7@I7@A E@$) 8 J8:8 < 868C5:7>78B =9 5;8 A6<:9 <> 5;8 7A;5 5; 5 75 J ' <F8 8C<@B ' =8><:8 J8 :8 ; 8B J ; 5 J8 J0 @B E@B8: 5<<B 5; 5; 5 5<E@B7@A G<7@50 :8F<?8B GG :8@569 F768 ' >:<F' 5;8 8 :5;0 J ' <@8 <> 5;8 ;7A;8 5 EF F75 ' <> 8 ' C:7@ ' 0 @B 5; 5 J8 ;<G8B0 =8><:8 @<5;8:' E@ ; B 850 5< ; ?8 5<<B EG<@ @ 8?8@ 6<>578:' G7@D @ C68$;8 F7 5 ' :< 8 @B >866 G:8 8@57@A E ' J75;' ' 8:78 ' <> B7 D <6?7@A ?78J ' <> : ?7 ;7@A A: @B8E:0 @B >7@ 669 B78B J 90 68 ?7@A 5;8 A6 C78:' @B 75 ' F7A;59 =<E@B7@A G:8C7G7C8 ' E@B8:' @ 8LHE7 758 G 68 =6E8 I90 >:88 >:<F' ' 7@A68 G8CI' <> C6<EB$X

;8 @7A;5 G 8B <?8:' J75;<E5 @95;7@A J<:5;' F8@57<@0 =E5 J8 ; B ; B <CC 7<@5<= 8:?8 7@5;8 F<:@7@A @7@ 5 @C8 <>5;8 CE:7<E ' 8? G<: 57<@5; 5 7 ' >:8HE8@569 @<57C8 =68 7@5;8 67A;' 6G $ @5;8 G:8?7<E ' @7A;5 J8 ; B ; E@A EG <@ ' I@<=' <> :<CI' <E:' F CI7@5< ;' = A C<@5 7@7@A >7?8 =<5568 ' <> <B78:R ' = B J7@8"$ @5;8 F<:@7@A0 65;<EA;' 5;8 5<GG8:' GG8 :8B5< ; ?8 =88@7@ 66 @7A;50 =<E5><E: ' >7>5; ' ; B 8? G<: 58B$ 5 J ' 5: @A8 0 F9 >:78@B ' ; B @<5 5 I8@ @90 @875;8:' ; B 0 @B 5;8 AE7B8 ' 8 C;' B8C6 :8B 5; 5 5;89 ' ; B @<5

88@' @9' <@8' 5<EC;' 75$ @' > C5' 75' J ' C68 :' 5; 5' 5;8:8' J ' @<' 8LD G6 @ 57<@' <>' 5;8' G;8@<F8@<@0' ;E5' 7@' 5;8' B:9@8 ' <>' 5;8' 7:' 5766' 75' 7 ' :8F :I =68' 5; 5' 5;8' B:9@8 ' <>' 5;8' 7:' M<:' 5;8' 8? G<: 57<@' <>' J7@8N' 7 ' 6J 9 ' A:8 58 5' J;8@' ' 5: @A8:' 7 ' 7@' <@8R' G :59K5;8' B79@8 ' C E 8B' ;9' 5;8' G:8 8@C8' <>' 8?8@' ' 7@A68' ; F<E@7L' G<:58:' 7 ' <F857F8 ' <' A:8 50' 5; 5' @<5' ><E: >7>5; ' ;E5' 5;8' 8@57:8' HE @5759' B7 GG8 : $ <:' ' 57F8' ' ><E@B' B7>>7CE659' 7@' C<F= 57@A' 5;7 ' G;8D @<F8@<@0' ;E5' 5'6 5' B7 C<?8:8B' 5; 5'7>' ' E 8B' 5;8' J7@8 >6 I' ' ' G766<J' BE:7@A' 5;8' @7A;50' 5;8' 8? G<: 57<@' J ' C<FG685869' 5<GG8B$

5'2' ' J8' @ <?8B' ='"' C:< ' 5;8' A6 C78:'7@' 7@A68' >768' 5<J :B ' 5;8' ><<5' <>' ' A:8 5' AE669'0' J;7C;' 68B' >:<F' 5;8' EGG8:' 6<G8 ' <>' 5;8' A6 C78:' B8' 6 ' <@@8' 78::80' 5<' 5;8' 6<J8 5' G<7@5' 7@' 5;8' :7BA8' 5; 5' :E@ ' >:<F' 5;8' C:7@ ' 5<' 5;8' @7<E@5 7@' C 668B' <C;8' 4 E:7<0K' C;88:8B' ;9' <B78:0' J ;<' @<J':85E:@8B' J75;' ;7 ' J: G ' 5<T ' B: :B8$;7 ' AE669' M<:' 2 0' J ' B7 C<?8:8B' @B' B8 C8@B8B'=9' :$ ECI ' 8550' @B' J8' J766' @<J' :85E:@'$><:' F7@E58'5<' 5;8' 8LG6<: 57<@ ' <>'5; 5' CC<FG; ;8B'F<E@5 7@88:$

@' 5;8' 98 :' Q' ;8' ; B' 5;8' A<<B' ><:5E@8' 5<' <=5 7@' >:<F' 5;8' %- - ' ' ' 2 ' 5' :7 ' ' $ C<G9' <>' 5;8' 5;8@' E@GE=67 ;8B' ;885' ' <>' 5;8' F G' <>' 4: @C80' @B' J75;' 75' 7@' ; @B00';8' J8G5' = CIJ :B ' @B' ><:J :B ' C:< ' 5;8' C8@5: 6' ' EG;7@8' 6G 0' E@D 5:<E=68B'=9' 5;8' B<E=5 ' '5<' 5;8' 7B8@5759' <>' G8 I 0' J;7C;' ; B' G8:D G68L8B' :$ CB<@ 6B' @B' F9 86>'7@' 0' @B0' 8@67A;58@8B'=9' 750' ;8' J ' =68' 5<' G<7@5' <E5' MJ677C;' ;8' B7B' 7@' 5;8' > 7:8 5' F @@8:N' 5; 5' J8' ; B' C<@><E@B8B' 5;8' C:7@ ' J75;' @<5;8:' F<E@5 7@K5;8' 7C' @ '%<F$) 8' F B8' 5;7 '=6E@B8:' 5;:<EA;'7FG8:>8C5' I@<J68BA8' <>' 5;8' B7 5:7C5' @B' 7@ CCE: 58' :8G<:5 ' <>' 5;8' @ 57?8 '0K=E5'75' J ' @<5' @' 8L5: <:B7@ :9' <@8' M5;8'5J<' F<E@5 7@ ' 58' @<5' E7B7I8'8 C;' <5;8:N0' C<@ 7B8:7@A' 5;8' B7>>7CE659' 5; 5'5;8:8' 7 ' 7@' <=5 7@7@A' >:<F' @9' 8LC8G5' 5;8' ?8:9' ;7A;8 5' EF F75 ' $C<FG6858'?78J' <>' 5;7 ' 7@5:7C 58' A:<EG$

;8' 75E 57<@ ' <>' 5;8' G:7@C7G 6' EF F75 ' C @' =8' G8:C87?8B' 5' ' A6 @C8' <@' 5;8' CC<FG @97@A' F G0' J;7C;' 7 ' ' :8G:<BEC57<@' <>' ' G<:D 57<@' <>' ;885' $;8' F F' :7BA8' <>' 5;8' C; 7@' :E@ 0' 5' 5;7 ' G 7B0' @8 :69' @<:5;' @B' <E5;$ <C;8' 4 E:7<0' 5' 5;8' @<:5;8:@' 8L5:8F 80' 7

G8 I 0 =E5 75 7 ' < ; E5 7@ =9 5 ; 8 <5 ; 8 : F <E@5 7@ 0 5 ; 5 75 7 ' 86B<F 88@ 8LC8G5 >:<F ' B7 5 @C80 @B 5 ; 8@ 7 ' E E 669 C<@><E@B8B J75 ; 5 ; 8 @87A ; =<E:7@A EF F75 $ 5 '@ F8 ; '=88@ CC7B8@5 669 <F7558B <@ 5 ; 8 F G0 =E5 75 ' 75E 57<@ 7 ' :8G:8 8@58B =9 5 ; 8 6 :A8 G 5C ; <> :<CI 0 @8 :69 E: :<E@B8B=9 A6 C78: 0 5 ; 5 7 ' 88@ =85J88@ 5 ; 8 J<:B ' /8>:<7B8 @B 5$ 86?<EL$

; 8 6<J8 5 B8G:8 7<@ <@ 5 ; 8 F 7@ :7BA8 5< 5 ; 8 <E5 ; <> 5 ; 8 68>:<7B8 7 ' 5 ; 8 <6 BE 8680 @B 5 ; 7 0 CC<:B7@A 5< ; 6:$ EC I855 0 7 ' 0 2 >885$; 8 :7BA8 <<@ :7 8 ' A 7@0 @B0 ' ; 5568 > :5 ; 8 : 5< 5 ; 8 <E5 ; 0 !<7@ ' @<5 ; 8 : :7BA8 :E@@7@A @8 :69 8 5 @B J8 5$ < ' F<E@5 7@ 5 5 ; 8 !E@C57<@ <> 5 ; 8 8 5J< :7BA8 ' 5 ; 8 4 :8@C ; F8@ ; ?8 A7?8@ 5 ; 8 7@AE6 : @ F8 :+58 B8 ' C8E> ' <EA8 ' ; 8 ; 7A ; 8 5 G<7@5 ; 8 : 8 =<E5 ' 7 ' 0 Q >8850 =E5 ' 675568 5< 5 ; 8 J8 5 5 ; 8 : 8 7 ' @<5 ; 8 : G8 I ' M <@5 @ N <> 0 1 ' >885$; 8 F 7@ :7BA8 :E@ ' >:<F 5 ; 7 ' 6 5 @ F8B G<7@50 7@ ' @<:5 ; J8 58:69 B7:8C57<@0 5< 5 ; 8 <6 ' B8 9 0 =<5 ; ' <> J ; 7C ; ' 8LC88B 0 ' >885$

5 J766 5 ; E ' =8 88@ 5 ; 5 5 ; 8 A8@8: 6 868? 57<@ <> 5 ; 7 ' F 7@ :7BA8 7 ' 6F< 5 8HE 6 5< 5 ; 5 <> 5 ; 8 : @A8 <> <@5 6 @C0 <: <> 5 ; 8 C8@5: 6 8@@7@8 6G ' 0 @B 7> J8 J8 : 8 5< ><66<J 75 <E5 F<: 8 C<FD G685869 0 <: 5< ><66<J ; 5 ; 8 <5 ; 8 : :7BA8 ' E: :<E@B7@A <: : B7 57@A >:<F 750 J8 ; <E6B >7@B 5 ; 5 5 ; 8 : 8 7 ' ' :8F : I =68 = 8@C80 5 ; :<EA ; <E5 5 ; 8 8@57 : 8 B7 5:7C50 <> 6<J A G ' @B B8G:8 7<@ 0 @B 5 ; 5 5 ; 8 : 8 @ 8L5: <:B7@ :9 @E F=8 : <> G8 I ' <> F8B7E F 868? 57<@$P ; 8 B7>>7CE659 J ; 7C ; ' 8LG6<:8: ' ; ?8 8LG8:78@C8B 7@ ' EG ; 7@B 7@ 7B8@57 ' >97@A G8 I 0 ; ' ?8:9 FEC ; :7 8@ >:<F 5 ; 8 868? 57<@ <> 5 ; 8 :7BA8 ' A8@8: 669 =87@A F<:8 E@7><: F 567 ; 7 ' C<F F<@69 ><E@B 7@ 5 ; 8 6G 0 @B 5 ; 8 C<@ 8HE8@5 > C768 C<@C8 6F8@5 <> <@8 G<7@5 =9 @<5 ; 8 : $; 8 B7>>7CE659 ; ' =88@ 8@ ; @C8B =9 5 ; 8 @ : :<J@8 ' @B 8 : : 57C C<E: 8 ' <> 5 ; 8 ? 6689 $

; 8 G< 8 7<@ <> 5 ; 8 ¢ B? @C8B C<G9 R <> ; 885 ' <> 5 ; 8 4 :8@C ; F G0 8@ =68B :$ EC I855 5< A: G F< 5 <> J ; 5 ' ; ?8 !E 5

P ; 8 : 8 F<: 8 5 ; @ 5J8@59 G8 I ' 8LC88B7@A Q0 ' >8850 @B 5 ; 7 : 59 <5 ; 8 : ' 8LC88B7@A 0 ' >8850 J75 ; 7@ 5 ; 8 B7 5:7C5 =<E@B8B =9 5 ; 8 : 7?8 : ' <F @C ; 80 ' : C0 @B ' E: @C8$

7B0 @B FEC;' F<:80 @B ;8 BB8B0 7@ Q0 5;:88 7@58:8 57@A G 8 ' C:< ' 5;7 ' G :5 <>'5;8 C; 7@ 5< 5;< 8 6:8 B9 I@<J@$;8 >7: 50 >:<F 7668 (66<E7 8 5< ' 8: :B80 ' 5;8 ?766 A8 <> 6 EL0 @B 5;8 A6 C78: ' B@ 86+ @B B8 6 ' 76 5580 K 5;7 ' ;8 C 668B 5;8 <6 BE 862 0 5;8 8C<@B0 =85 J88@ (7668 (66<E7 8 @B (766 :' BR :8@8 M<@ 5;8 E5 :85 :< BN .' 6 EL @B 5;8 A6 C78: ' 6 @C @B BR : 7@80 K 5;8 <6 BE &6 C78:' 6 @C 0 @B 5;8 5;7:B0 >:<F' (66<E7 8 5< ' 8: :B80 ' 5;8 &6 C78:' 6 @C0 5;8 &6 C78:' B8 R @CE6 0 @B 5;8 &6 C78:' B8 6 ' <@@8 78::80 5;8 <6 B8 ' C:7@ $

;7 ' 6 5 G ' J ' B7 C<?8:8B CC7B8@5 669$:$ EC I855 85 <E5 7@58@B7@A 5< 8@B8 ?<E:'5< C8@B 5;8 <7@58 B8 ' C:7@ 0 =E5 C7:CE FD 5 @C8 ' J8:8 A 7@ 5 ;7F0 ' ;8 :86 58 ' 7@ 5;8 ><66<J7@A J<:B '[K ' Z ::7?8B <@5;8 G6 58 E3 M<>5;8 &6 C78:' B8 R @CE6 N0 Z ' F< 5 5:7I7@A ?78 J' <>5;8 C:7@ '=E: 5 EG<@ @ 0 @B ' ; 59 7@ G8C57<@ 8@C<E: A8B E ' 5< ;<G8 5; 5 75 ' C8@5 J<E6B =8 G: C57C =68$ @ 5;8 7B8 ' <> ' 8: :B8 @B 5;8 &6 C78:' <7:' 75 G:8 8@5 0 ' ; ' =88@ =8 B9 5 58B0 5;8 F< 5 G:8C7G75<E ' @B 7@ CC8 7=68 > C8 ' 5; 5 C @ J866 =8 C<@C87?8B 0 =E5 7@ 5;8 B7:8C57<@ <> 5;8 &6 C78:' B8 R @CE6 0 '5;8 EGG8:' G6 58 E <>5;8 &6 C78:' 6 @C 7 ' @ F8B <@ 5;8 4:8@C;' F G0 5;8 6<G8 ' :8 68 ' : G7B0 @B 7F F8@ 8 F 8 ' <> ' @B ' C<?8:' 75 @8 :690 5< 5;8 EF F75$3

Z ;8 @<J' J ' 7@ ?8:9 = B <:B8:0 @B ' J8 @I' 5 8 C;' 58G =<?8 5;8 I@880 75 <<@ =8C F8 8?7B8@5 5; 5 <E:' G:< G8C5 ' <> ECC8 ' J8:8 8L5:8F869 B<E=5>E6$ '@8 :8:' GG:< C;0 5<<0 B7 D C6< 8B 5: C8 ' <> >:8 ;' ? 6 @C;8 0 @B >58:' FEC;' B867=8: 57<@ @B ' C :8>776 8L F7@ 57<@ 5;:<EA;' 5;8 5868 C<G80 75 J ' B8C7B8B 5; 5 5;8 C; @C8 ' 7@ <E:' > ?<E:' J8:8 5<< F 66 5< :8@B8:' 75 B8 7: =68 5< J 58 57F8 7@ 5;8 558F G5$ $ $ $ ' ' 8L F7@8B 5;8 F G0 >:<F' J ;7C;' ' G8:C87?8B 5; 5 5;8 A6 C78:' 88@ 5;:<EA;' 5;8 A G3 M7@ 5;8 :7BA8 :E@@7@A >:<F' <C;8 4 E:7< 5< 5;8 C:7@ N Z5< 5;8 J8 50 5 ' A:8 5 B8G5;' =86<J0 FE 5 =8 5; 5 <> ' <@@8 78::80 @B 7> ' B8 C8@5 5< 75 ' ;8 B J ' G: C57C =680 ' G A8 F7A;5 G:<= =69 ;8 8>>8C58B 5< ' 8: :B8$ @ EAA8 57@A 5< :<S @B 8:F' 5; 50 5;<EA;' = >>68B =9 5;8 5 58 <> 5;8 @<J' <@ 5;8 C:7@ 0 J8 F7A;5

5766 C;78?8 <F85;7@A <> 7@58:8 5 @B 7FG<:5 @C8 =9 B7 C<?8:7@A ' @8J C<60 5;89 =<5;' ;8 :5769 8@58B0 @B 7@' ' >8J' F7@E58 ' 8:F J ' <?8:' 5;8 8BA80 @B CE557@A ;7 ' J 9 B<J@' 5;8 : 5;8:' ><:F7B =68 2 A 85C$ 85C0P

;7 ' J ' 5;8 C<E6<7:' 5 5;8 ><<5 <> J ;7C;' J8 ><E@B <E: 86?8 ' 5 B 9=:8 I' <@' 5;8 Q 5;' <> .E@8 2 ' ;E5 =8><:8 C<F F8@C7@A' 5;8 :86 57<@' <> <E:' B<7@A ' EG<@' 5; 5 8?8@5>E6 B 90 ' FE 5 :8C<E@5 5;8 8LG8:78@C8 ' <> 8 : $ 5;8J ' @B <@@89 7@' Q$

;8 8 A8@568F8@0 J75;' 5;8 5J <&:<SR 0 558FG58B 5;8 C8@5 <> 5;8 C:7@ ' '>8J' "J88I ' >58:' :$ E8I855; B 7@ G8C58B 5;8 F<E@D 5 7@0 @ EAE 5 Q 0 9 ' :$ <@@890 ZJ8 GE ;8B <@0 @B <F' ;<G8 ' 8 C;' F<F8@5 :< 8 ;7A;8:' @B ;7A;8:0 8?8@' 5;8 C E57<E ' 7C;86 <FF7558B ;7F 86> < > :' ' 5< C:90 c ;0 F 6;8E:8EL' C:7@ 0 ?<E ' 8:8S ;78@5<5 F<:5 0R ' J8 BB:8 8B <E: 86?8 ' 5< 5;8 6 5 6<G8 68 B7@A' EG 5< 5;8 ><<5 <> 5;8 >7@ 6 C<@8$;8 <6B G:<?8:= =<E5 ć F @9 ' 67GR J 0 ;<J8?8:0 5< G:<?8 5:E8 <@' 5;7 ' <CC 7<@$ ::7?8B 5 5;8 5<G <>5;7 ' 6<G80 J8 ><E@B 5; 5 J8 J8:8 CE5 <>>:<F 5;8 G8 I' =9 ' ><:F7B =68 =8:A C;:E@B0 C:< 8B =9 5;8 :<558@8 5 <> @<J =:7BA8 $) 8 6<<I8B 5< 5;8 :7A;5 @B 5< 5;8 68>50 5< 88 J;85;8:' 75 J<E6B =8 G< 7=68 5< A85 <@ 875;8:' :858 5 75 ' 8L5:8F7590 =E5 7@ 58 B <> :7 7@A B7:8C569 >:<F 5;8 @<J' ' 5;89 GG8 :8B 5< B< >:<F =86<J0 5;89 J8:8 58:F7@ 58B =9 ' J 66 <> :<CI' <F8 ><:59 >885 ;7A;$;8:8 J ' =E5 <@8 G6 C8 J;8:8 5;8 =8:A C;: @B J ' @ ::<J' 8@<EA;' 5< BF75 <> C:< 7@A0 @B 5;8:8 ' C67>>' <> 7C8 ; B 5< =8 C67F=8B0 @B 5;8@' G 5;' 5< =8 CE5 EG ' 588G 6<G8 <> @<J0 =8><:8 5;8 :858 C<7BB =8 :8 C;8B$ 5 6 50 >58:' 8 :C;7@A 7@' ? 7@' ><:' <F8 57F80 7C;86 = B8 E ' J 75 '675568 0 @B 5 :58B <>>5< 8LG6<:8"5;8 A G 8G : 57@A' 5; ' ;7A;8 5 G8 I' >:<F' 5;8 @<J B<F8 <@$7;8 :7A;50" @B 88 7>75 J8:8 G< 7=68 5< C8@B 5;8 :<CI9 J 66$:8 8@569 ;8 GG8 :8B0 8?7B8@569 C67F=7@A J75;' B7>>7CE659 0 @B 5 6 5 5<<B <@5;8 : 8 75 86>$ A 7@' J8 5;<EA;5 5;8 ?7C5<:9 J ' J<@0 @B 5 :58B <>>5< ><66<J' ;7F$ EBB8@69 ;8 C 668B 5< E ' 5< ; 650 @B 5E:@8B 5< B8 C8@B$ @' ' >8J' F7@E58 ' ;8

5< 7G8B$ >58:' '6<@A' G E 8' 678' ;<E58B' 5<' ;7 ' =:<5;8:0 97@A' 5; 5' ;8' J ' @<5' ;68' 5<' :85E:@' ;9' 5;8' J 9' ;8' ; B' C8@B8B$ .8 @' J ' 8?7B8@569' E@8 9' =<E5' ;7F0 @B' ><:' <F8' 57F8' J8' J 5C;8B' ;7F' J75;' FEC;' @L7859$ 5' 68@A5;' ;8' =8A @' 5<' ;8J' <E5' 58G ' 7@' 5;8' @<J' 6<@A' 5;8' > C8' <>' 5;8' G8 I' 5<J :B ' E $ .8 @' @<J' 68>5' E 0 @B0 F I7@A' ><:' 5;8' 7C8 C676>' F8@57<@8B' =<?80 C;<!7G8B' JE9$E@5760 >58:' =<E5' ' HE :58:' <>' @' ;<E:R ' 6 =<E:0 ;8' C<@5:7?8B0 <F8;<J' <:' <5;8:0 5<' J<:F' ;7F 86>' EG' 750 @B' =8A @' 5<' CE5' 58G ' 5<' F885' ;7 ' =:<5;8:$ 6F< 5' 8?8:9' 58G' GG8 :8B' 5<' ;8' CE5' :7A;5' 5;:<EA;' 5;8' @<J9' C:E 5' 7@5<' 5;8' ; :B' 7C8' =86<J0 @B' @' 7@C7G78@5' 5:8 F' <>' @<J' C F8' ;7 7@A' B<J@' 5;8' 7B8 ' <>' 5;8' G8 I' ' 5;89' BEA' 75' J 9' J75;' 5;87:' L8 $ 7C;86' C<E6B' @<5' ; ?8' =88@' FEC;' F<:8' 5; @' ' 9 :B ' >:<F' E 0 @B' 985' 75' J '>E66' 5;:88' HE :58:' ' <>' @' ;<E:' =8><:8' 5;8' =:<5;8:' F85$;7 ' B<@80 5;89' B8 C8@B8B' C :8>E669 0 =E:97@A' 5;87:' L8 ;8 B ' B88G' 7@' 5;8' @<J' 5' 8?8:9' 58G$

7C;86R ' CC<E@5' J ' 5; 5' ;8' ; B' :8 C;8B' 5;8' :858' J75;' A:8 5 B7>>7CE659 0 @B' J' 5; 5' 75' J ' G: C57C =68' ><:' <F8' B7 5 @C80 7@ > C50 ' > :' ' ;8' C<E6B' 88' 0 ;E5' 5; 5' 5;8' @<J' J ' 7@' ' F< 5' B @A8:<E ' C<@B757<@0 =870@A' ?8:9' 7@C<;8:80 5' @B' :8 57@A' <@' ; :B 7C80 5; 5' J;8@' ;8' =8A @' 5<' B8 C8@B' 7@' <:B8:' 5<' 5866' E ' 5;7 0 ;8 ><E@B' 5;8' :<CI ' <' F<<5;' @B' 67G!78:9' 5; 5' :85E:@' J ' 7FG< 7=680 @B' 5; 5' ><:' <F8' 675568' 57F8' ;8' >8 :8B' 5; 5' ;8' ;<E6B' @<5' =8' =68 5<' 8L5:7C 58' ;7F 86>0 @B' J ' 7@' C<@ 7B8: =68' B @A8:$ >' C<E: 8 5;8' : 58' C<E6B' ; ?8' =88@' :8 B78B' =9' 5;8' J 9' <E:' AE7B8 ' ; B B8 C8@B8B0 =E5' 75' J ' <' 8?7B8@5' 5; 5' 5;87:' !EBAF8@5' J ' A 7@ 5 !7:<C88B7@A0 5; 5' J8' B7B' @<5' >886' !E 57>78B' 7@' E:A7@A' 5;8F' <@$) 8 ; B' 88@' <' FEC;' <>' 5;8F' 5; 5' J8' >865' E:8' 5;89' J<E6B' @8?8: ; @A' = CI' E@68 ' 5;8:8' J ' :8H!$ B @A8:0 @B' <' J8' A ?8' 5;8' J<:B ><:' :85:8 57@A$3P' ?

P

@' =<5;' <>' 5;8 8' 8LG8B757<@ ' 5;8:8' J ' >7@8' J8 5;8:' @B' G68@59' <>' 57F8$ @' 8 C;' <CC 7<@' 5;8' G :578 ' 68G5' <E5' 50 @B' 5 :58B' >:<F0 ' C<@ 7B8: =68' 868? 57<@0 @B' ::7?8B' 5' 5;8' = 8' <>' 5;8' >7@ 6' G8 I' <>' 5;8' C:7@ ' 8 :69' 7@' 5;8' B 90 @B' J75;' !768@59' <>'

$ P' '8 2 '$ E@8 $

Q'

EG8:>6E<E ' 8@8:A9$ &E7B8 ' @B' 5: ?8668: ' 67I8(<@' 8 C6(<CC 7<@(J8:8' 8LC8G57<@ 6 F8@(8LG8:78@C8B' F<E@5 7@88: (J67<' ; B' G:<?8B' 5;87:' I766 @B' C<E: A8' <@' @EF8:<E ' @58C8B8@5' <CC 7<@ (@B' J;<' J8:8' @<5' CCE 5<F8B' 5<' 5E:@' J 9':><F' ' 5;7@A' F8:869' =8C E 8' 75' J ' B7>>7CE65' 5<' B<$ @' 8 C;' <CC 7<@' 5;8' 558FG5 ' J8:8' = @D B<@8B' =8C E 8' 5;8' 5 58' <>' 5;8' @<J' <@' @B' =86<J' 5;8'>7@ 6 G8 I' J ' EC;' 5; 5' ? 6 @C;8 ' J8:8' @57C7G 58B' (@B(CC<:B7@A' 5<' 5;8' !EBAF8@5' <>' 5;< 8' J;<' J8:8' C<@C8:@8B(5;8:8' J ' EC;' @' F<E@5' <>' ' ' '>:<F' 5;7 ' C<@B757<@' <>' 5;7@A (5; 5' 75' J ' E@!E 57D >7 =68' 5<' G8: 8?8:8$

) 8' 68 :@5' G:7? 5869(>:<F' 8 : $ (5;8J (<@@89(@B' EC I855(5; 5' E@68 ' 5;8' @<J' J ' 7@' ' A<<B' 5 58' EG<@' 5;8'>7@ 6 G8 I' M5; 5' 7 ' 5<' 9(C<;8:8@5' @B' 5 =68N(J8' ;<E6B' G:<= =69' =8' <>' 5;8' 77F8' <G7@7<@' + ' 5;8F 86?8 ' (@B' 5; 5' 65;<EA;' 5;8'> C8' <>' 5;8' F<E@5 7@' >:<@57@A' 5;8' &6 C78:' B8' R @CE6 ' J ' FEC;' 68 ' 588G' 5; @' 75 ' <5;8:' > C8 (@B' J ' GG :8@569' 5;8' ' 7B8' EG<@' J677C;' @' 558FG5' J ' 5' 66' 67I869' 5<' =8' ECC8 >E60' 75' J (@8?8:5;868 (<' 588G(5; 5' ><:' 8?8: 6 B 9 (5' 68 50' >58:' ' > 66' <>' @<J' EG<@' 750' 5;8' C; @C8 ' 7@' > ?F:' <>' ? 6 @C;8 ' J<E6B' =8' C<@ 7B8: =68$ $

;8' :8 B8:' @88B' C :C869' =8' 5<6B(>58:' 66' 5; 5' ; ' =88@' 7B' =<E5' 5;8' ? :7 =68@8 ' <>' J8 5;8:'7@' 5;8' 7A;' 6G (5;8' C; @C8' J ' F 66' 7@B88B' 5; 5' J8' ;<E6B' >7@B' EG<@' 5;8' Q 5;' <>' .E@8(<:' @9' <5;8:' 85' B 9(5;8' G:8C7 8' C<@B757<@' <>' >> 7: ' 5; 5' J ' B88F8B' 7@D B7 G8@ =68' ><:' ECC8 $) 8' ; B' EC;' C<@>7B8@C8' 7@' 5;8' !EBAD F8@5' <>' <E:' >:78@B (5; 5' 75' J ' E@B8: 5<<B' F<@A 5' E ' 5;8' C8@5' ;<E6B' =8' = @B<@8B(E@68 ' 5;8' C<@B757<@ ' J8:8' F @7>8 569' > J@7: ' ;68$

9' >7?8' F7@E58 ' 5<' 7L' J8' J8:8' 5' 5;8' 5<G' <>' 5;8' AE669' M ' >7: 5 ' : 58' C<E6<7:(=<E5' ' >885' ;7A;N(@B' J75;7@' 7A;5' <>' <E:' J<:I$:B(5;7@(@B' J8BA8 67I8' ' 5;8' C:7@ ' ; B' 6<<I8B' >:<F' > :(75' ; B' @8?8:' 6<<I8B' <' ; :B' @B' <' 5;7@' ' 75' B7B' J ;8@' J8' 8F8:A8B' >:<F' 5;8' 5<G' <>' 5;8' C<E6<7:' 5;:<EA;' 5;8' A G' 7@' 5;8' :7BA8' (@<' 58@B8:' ; B<J ' G<I8' <>' =:< B' @B' :<E@B8B' :7BA8 (=E5' ; :GN @B' 77 B@J68 ' 75 ' 8:: 58B' 8BA8 ' 5<<B' <E5' A 7@ 5' 5678' C68 :

sky.* It had been said that the route must be taken by one of the ridges of the final peak, but both were alike repellent, hacked and notched in numberless places. They reminded me of my failure on the Dent d'Hérens in 1863, and of a place on a similar ridge, from which advance or retreat was alike difficult. But, presuming one or other of these ridges or arêtes was practicable, there remained the task of getting to them, for completely round the base of the final peak swept an enormous bergschrund, almost separating it from the slopes which lay beneath. It was evident thus early that the ascent would not be accomplished without exertion, and that it would demand all our faculties and all our time. In more than one respect we were favoured. The mists were gone, the day was bright and perfectly calm ; there had been a long stretch of fine weather beforehand, and the snow was in excellent order ; and, most important of all, the last new snow which had fallen on the final peak, unable to support itself, had broken away and rolled in a mighty avalanche, over schrund, névé, séracs, over hills and

* The above view of the Ecrins was taken from the summit of the Col du Galibier.

valleys in the glacier (levelling one and filling the other), completely down to the col, where it lay in huge jammed masses, powerless to harm us ; and had made a broad track, almost a road, over which, for part of the way at least, we might advance with rapidity.

We took in all this in a few minutes, and seeing there was no time to be lost, despatched a hasty meal, left knapsacks, provisions, and all incumbrances by the col, started again at half-past six, and made direct for the left side of the schrund, for it was there alone that a passage was practicable. We crossed it at 8.10. Our route can now be followed upon the annexed outline. The arrow marked D points out the direction of the Glacier de la Bonne Pierre. The ridge in front, that extends right across, is the ridge that is partially shown on the top of the map at p. 202, leading from Roche Faurio towards the W.N.W. We arrived upon the plateau of the Glacier de l'Encula, behind this ridge, from the direction of D, and then made a nearly straight track to the left hand of the bergschrund at A.

Thus far there was no trouble, but the nature of the work changed immediately. If we regard the upper 700 feet alone of the final peak of the Ecrins, it may be described as a three-sided pyramid. One face is towards the Glacier Noir, and forms one of the sheerest precipices in the Alps. Another is towards the Glacier du Vallon, and is less steep, and less uniform in angle than the first. The third is towards the Glacier de l'Encula, and it was by this one we approached the summit. Imagine a triangular plane, 700 or 800 feet high, set at an angle exceeding 50° ; let it be smooth, glassy ; let the uppermost edges be cut into spikes and teeth, and let them be bent, some one way, some another. Let the glassy face be covered with minute fragments of rock, scarcely attached, but varnished with ice ; imagine this, and then

6 7 } * ! 4) (' ; Q

9<E J766 ; ?8 ?8:9 > 7@57B8 <> 5;8 > C8 <> 5;8 C:7@ <@ J;7C;
J8 5<<B$ 5 J @<5 G< 7=68 5< ?<7BB85 C;7@A 5<@8 J;7C; 5;89 >866 C E 8B J<:B E@F8@57<@ =68 5< :7 8$;8 A:8 58 5 >:78@B
J<E6B ; ?8 :8?768B 8 C;<5;8:7@ EC; 75E 57<@$) 8 A 7@8B5;8
8 58:@ : 580 @B 8@B8 ?<E:8B ><: ; 6> @ ;<E: 5< J<: I EGJ :B
5<J :B 5;8 EF F750 =E5 75 J E 868 M8 C;9 :B <> G:<A:8 C< 5
@ 7@C:8B7=68 57F8N0 @B ; ?7@A @< B8 7:8 5< ><: F 5;8 CHE 7@5 @C8
<> 5;8 &6 C78:% <7:7@ G:8C7G75 58 F @@8:0 J8 ;8 5 :85:8 50 @B
:85E:@8B 5< 5;8 C;:E@B$) 8 A 7@ ;86B C<E@C760 @B 75 J
E@ @7F<E 69 B8C7B8B5; 5 J8 ;<E6B ;8 =8 58@7> J8 C<E6B @<5 CE5
6<@A 5;8 EGG8:8BA8 <> 5;8 C;:E@B0 @B0 J;8@ @8 :69 =8@8 5;5;8
EF F750 J<: I EG "5< 75$ < :<S 5<<I <> ;7 C< 5 @B J8@5 5<
J<: I 0K <;7C80K @<5 5; 5 =6 CI 7C8 < <>58@ F8@57<@8B @B < 86D
B<F 88@0 =E5 <@7C8 ; :B 7C8 C<E6B =8$) 8 :9 J<: I ><:5;8
AE7B8 $:<S CE5 ><: F<:8 5; @ ; 6> @ ;<E:0 @B J8 B7B @<5 88F
5< ; ?8 B? @C8B 5 66$ <F8 <@8 =8;7@B0 887@A ;<J A:8 5 5;8
6 =<E: J 0 @B ;<J 6<J 5;8 G:<A:8 0 EAA8 58B 5; 5 >58: 66 J8
F7A;5 B< =8558: <@ 5;8$ 7;58$:<SR =6<<B J EG0 @B 7@B7A@ @5
5 5;7 67A;5 <@ ;7 G<J8: 0 ;8 C8 8B J<: I7@A05E:@8B 7@ ;7 58G 0
@B :E ;8B 5<J :B F8 J75; ; 58 5; 5 F B8 F8 ;EBB8:0 Z 9
66 F8 @ 685 E A< 5;8:80 5;8P <<@8: 5;8 =8558:$3 %< 67A;5 J
7@58@B8B0 @B ;8 :8 EF8B ;7 J<: I0 >58: 57F8 =87@A :8678?8B =9
7F8:$ 6> G 5 58@C F8 0 @ ;<E: ; B G 8B0 5;89 J8:8Y 5766
CE557@A$ ' :8 :9 J<: I ><: E 0 ><: 5;8:8 J <@< C G8:7@A =<E5 5<
=8 B<@8 ;8:8 0 ; @B J866 ><<5 ;<68 J8:8 @8C8 :9 0 5;8
>7@A8: @B 5<8 " A<5 ?8:9 C<6B 0 5;8 7C80 75 =<< F8B 7@ =<E@B7@A
B<J@5;8 =8:A+;:E@B0 J@ ?8:9 EAA8 57?80 C<@?8: 57<@ J ?8:9
:8 5:7C58B0 8G : 58B J8 J8:8 =9 <E: 585;8: <> Q >885 G78C8$
@<5;8: ;<E: G 8B$) 8 J8:8 @<J 6F< 5 7F F8B7 5869 =86<J 5;8
EF F750 @B J8 5<GG8B 5< 6<< I EG$) 8 J8:8 @8 :69 > : <>75
M?8:57C 669N J8 ; B 88 =88@ F<:8 5; @ 5;:88 ;<E: =8><:8$;8 B 9
88F8B A<7@A A 7@ 5 E $;8 <@69 :<CI @8 : 5 ; @B J8:8 C 5D
58:8B0 @< =7AA8: 5; @ 58 CEG 0 @B F< 5 <>5;8 80 J8 ><E@B >58:D
J :B 0 J8:8 A6 S8B J75; 7C8$ 7F8 ><:= B8 CE557@A :7A;5 EG 5< 5;8

G<= ! "(!' ! ' 4 ' ("!

EF F75 8?8@ ; B 75 =88@ G< 7=68 J677C67 75 J @<5$) 8 B8C7B8B 5B A< EG 5< 5;8 :7BA8 A 7@ =9 F8 @ <> 5;8 :<CI 0 =E5 ; B J8 @<5 ; B C8:5 7@ C<@>7B8@C8 7@ 8 C;<5;8:0 75 E@HE8 57<@ =69 J<E6B @<5 "; ?8 =88@ B<@8 0 ><: 5;7 0 75 FE 5 =8 E@B8: 5<<B0 J 75E 57<@ J;8:8 @<5 <@69 '$ 67G ; ?8 =88@ > 5 6 5< 8?8:9 <@80 =E5 75 J<E6B ; ?8 =88@ < =89<@B B<E=5 [@<5;7@A0 F<:8<?8:0 J 8 78: 5; @ 5< F I8 <@8$ 5 J G6 C8 J;8:8 66 ; B 5< J<: I 7@ E@7 <@0 "J;8:8 5;8:8 FE 5 =8 @< 6 CI8@7@A <> 5;8 :<G80 @B @< E@@8C8 :9 58@ 7<@$ 4<: @<5;8:;<E: J8 J8:8 7@ 5;7 5:97@A 75E 57<@0 @B 5 Q$ G J8 A 7@8B 5;8 :>758 A 7@0 =E5 5 F EC;;7A;8:G<7@5 & (C6< 8 5< 5;8 EF F75$ E: F8@ J8:80 F >: 7B0 J8/ @7A;J<:@ <E50 CE557@A EG C<E6<7: >885 ;7A;J @<5 5;8 :7A;5 <:5 <> G:8G : 57<@ ><: J<: I <> 5;7 I7@B$ 8 75 < <: @<50 J8 J8:8 66 A6 B 5< :8 5 ><: ;<:5 57F80 ><: J8 ; B @<5 5 B<J@ F7@E58 7@C8 68 ?7@A 5;8 C<6 7L ;<E: =8><:8$ 7F8:0 ;<J8?8:0 J :8 5 68 0 I@<J7@A 5; 5 F7BB 9 J G 50 @B 5; 5 FEC;:8F 7@8B 5< =8 CC<FG67 ;8B0 @B E@578B ;7F 86>0 @B C<F F8@C8B J<: I7@A 5<J :B 5;8 EF F75$ <@@8C57@A 5;8 5885;<> :<CI J8:8 =8B <> @<J0 @B 7F8:0 =E5 >8J >885 >:<F F80 J C:< 7@A 5678 5<G <> <@8 <>5;8 80 J;8@ EBB8@69 J75;<E5 F<F8@5R J :@7@A0 75 =:<I8 J 9 E@B8: ;7F0 @B G6E@A8B B<J@ <@ 5< $ A6 C78:$;8 5 AA8:8B ><: 8C<@B <@8 ><<5 7@ 5;8 C5 <> 58GG7@A0 @B $5;8 <5;8:<@ 5;8 > 667@A F 0 5;<EA675 ;7F 6< 50 =E5 ;8 ; GG769 >866 <@ 5< 5;8 :7A;5 7B8 @B 5<GG8B ;7F 86>$ B ;8 5 I8@ 5;8 58G J75;;7 :7A;5 7@ 58 B <> 5;8 68>5 ><<50 ;8 J<E6B0 7@ 66 G:<= =76759 0 ; ?8 > 668@ 8?8: 6 ;E@B:8B >885 J75;<E5 5<EC;7@A @95;7@A0 @B J<:6B @<5 ; ?8 =88@ ::8 58B =8><:8 :8 C;7@A 5;8 A6 C78:0 ?8:57C 6 B7 5 @C8 <> 5 68 5 >885$

F 660 :7B7CE6<E 69 F 660 5;8 B7 5 @C8 J 5< 5;8 EF F750 J8 J8:8 <CCEG78B @8 :69 @<5;8: ;<E: =8><:8 75 J A 7@8B$ 7F8:) 8J >885 7@ >:<@50 @B ;80 J75; C ; C58:7 57C F<B8 590 ;8 7D 5 58B 5< 58G <@ 5;8 ;7A;8 5 G<7@50 @B B:8J = CI 5< 66<J E 5< G $ C:9 J : 7 8B ><: :<S0 J ;< ; B B<@8 5;8 C;78> G :5 <> +;8 J<:I0 =E5 ;8 B8C67@8B 5;8 ;<@<E:0 @B J8 F :C;8B <@ 5< 5;8

top simultaneously; that is to say, clustered round it, a yard or two below, for it was much too small to get upon.

According to my custom, I bagged a piece from off the highest rock (chlorite slate), and I found afterwards that it had a striking similarity to the final peak of the Ecrins. I have noticed the same thing on other occasions,* and it is worthy of remark that not only do fragments of such rock as limestone often present the characteristic forms of the cliffs from which they have been broken, but that morsels of mica slate will represent, in a wonderful manner, the identical shape of the peaks of which they have formed part. Why should it not be so, if the mountain's mass is more or less homogeneous? The same causes which produce the small forms fashion the large ones; the same influences are at work; the same frost and rain give shape to the mass as well as to its parts.

FRAGMENT FROM THE SUMMIT OF THE POINTE DES ECRINS.

Did space permit me, I could give but a sorry idea of the view, but it will be readily imagined that a panorama extending over as much ground as the whole of England is one worth taking some trouble to see, and one which is not often to be seen even in the Alps. No clouds obscured it, and a list of the summits that we saw would include nearly all the highest peaks of the chain. I saw the Pelvoux now—as I had seen the Ecrins from it three years before—across the basin of the Glacier Noir. It is a splendid mountain, although in height it is equalled, if not surpassed, by its neighbour the Aléfroide.

* The most striking example which has come under my notice is referred to in Chapter XX.

) 8' C<E6B' 5 9' <@' 5;8' EFF75' =E5' ' ;<:5' 57F80' @B' 5' '
HE :58:' 5<' 5J<' G:8G :8B'><:' 5;8' B8 C8@5$ %<J0' ' J8'6<<I8B' B<J@0'
@B' 5;<EA;5' <>' J; 5' J8' ; B' G 8B' <?8:' 7@' C<F7@A' EG0' J8' <@8'
@B' 66' ;8 75 58B' =<E5' :85E:@7@A' 5;8' F8' J 9$ <<:8' 7B0' @<$
) 6I8:' 7B' 5;8' F80' @B' ' 5<<'0 5;8' A::7B8' J8:8' =<5;' <>' 5;8'
F8' F7@B[5;7 0' =8' 75' :8F :I8B0' 65;<EA;' J8' ; B' C<@ 7B8:8B'
5; 5' 5;8:8' J ' @<' C; @C8' J; 58?8:' <>' A8557@A' EG' @9' <5;8:' J 9$
E5' 5;< 8' ¢6 5' :<CI'® J8:8' @<5' 5<' =8' ><:A<558@$ B' 5;89' =E5'
G:<5:EB8B' 5<' ' F<B8: 58' 8L58@50' <:' ; B' 5;89' =88@' F8:869' A6 S8B0'
J"8' ;<E6B' B<E=568 ' 5766'; ?8' 5:78B[=E5' 5;89' J8:8' @<5' :8 <@ =68'
:<CI 0K 5;89' J<E6B' @875;8:' 66<J' E ' 5<' ;<6B0' @<:' J<E6B' B<' 75'
5;8F 86?8 $ <' J8' 5E:@8B' 5<' 5;8' J8 58:@' :i580' 5:E 57@A' 5<' 6EC I'
5; 5' J8' ;<E6B' >7@B' ' J 9' B<J@' 5<' 5;8' C;:E@B0' @B' <F8' F8 @ ' <>'
A8557@A' <?8:' 75' >58:J :B $ E:' > C8 ' J8:8' ' 5<68: =68' 7@B8L' 5<
<E:' 5;<EA;5 0' @B' GG :8@569' 5;8' 5;<EA;5 ' <>' 5;8' G :59' J8:8' @<5'
; GG9' <@8 $ B' @9' <@8' 5;8@' 7B' 5<' F80' Z <E' :8' 'A:8 5' ><<6
><:' C<F7@A' ;8:803' ' ;<E6B' ; ?"8' @ J8:8B' J75;' ;EF76759 0' Z 5' 7 ' 5<<
5:E8$3 @B' ; B' F9' F<@75<:' A<@8' <@' 5<' 90' Z J8 :' 9<E' J766'
@8?8:' C8@B' @<5;8:' F<E@5 7@' 7>' 9<E' A85' B<J@' >86903' ' F'
7@C67@8B' 5<' 5;7@I' ' ;<E6B' ; ?8' 5 I8@' 5;8' < 5;$ @' > C50' 5;8' A F8'
;8:8' J ' @<5' J<:5;' 5;8' :7 I$;8' AE7B8' >865' 75' ' J866' ' <E:D
86?8 0' @B' ' 7F8:' 68B' <>0' ;8' :8F :I8B0' J75;' F<:8' G7859' 5; @'
6<A7C0' Z ;8' A<<B' &<B' ; ' =:<EA;5' E ' EG0' @B' ;8' J766' 5 I8' E ' B<J@'
7@' >85903' J;7C;' ;<J8B' G:8559' J866' J; 5' ;8' J ' 5;7@I7@A' =<E5$
;8' :7BA8' B<J@' J;7C;' J8' @<J' 8@B8 ?<E:8B' 5<' F I8' <E:' J 9'
J ' @<5' 7@>8:7<:' 7@' B7>>7CE659' 5<' 5;8' <5;8:$ <5;' J8:8' 8:: 58B' 5<'
@' 8L58@5' 5; 5' F B8' 75' 7FG< 7=68' 5<' I88G' 5:7C569' 5<' 5;8F0' @B'
<=67A8B' E ' 5<' B8 C8@B' <CC 7<@ 669' ><:' <F8' B7 5 @C8' <@' 5;8' @<:5;D
8:@' > C8' @B' 5;8@' F<E@5' A 7@$ <5;' J8:8' <' :<558@' 5; 5' 5;8'
F< 5' 8LG8:78@C8B' <>' <E:' G :590' ' J866' ' 5;8' 68 50' C<@57@E 669'
EG 85' =6<CI'6 :A8' @B' F 66$ <5;' :858' J8:8' <@ ::<J0' <' 5;7@0'
5; 5'75' J ' <>58@' ' F 558:' ><:' G8CE6 57<@' <@' J;7C;' 7B8' @' E@D
5 =68' =6<CI' J<E6B' > 66$

5' <@8' G<7@5' 75' 88F8B' 5; 5' J8' ;<E6B' =8' <=67A8B' 5<' :85E:@' 5<

DESCENDING THE WESTERN ARÊTE OF THE POINTE DES ÉCRINS.

5;8 EF F75 @B 5:9 5;8 <5;8: J 9 B<J@$) 8 J8:8 <@ 5;8 (8:9 8BA8 <> 5;8 :+58 0 <@ <@8 7B8 J ' 5;8 8@<: F<E ' G:8C7G7C8 > C7@A 5;8 86?<EL0 J ;7C;' 7 ' @<5 > :' >:<F G8:G8@B7CE6 :0 <@ 5;8 <5;8:' ' 6<G8 8LC88B7@A `"$ ' B88G @<5C;' =:<EA;5 E ' 5< @ =:EG5 ; 65$ 7F8:0 J ;< J ' 68 B7@A0 B? @C8B C E57<E 69 5< 5;8 8BA8 <@ ; @B ' @B I@88 0 @B G88:8B <?8:0 ;7 ' C :8 J ' =9 @< F8 @ ' E@@8!!8 :90 ><:' 5;8 :<CI ' ; B =:<I8@ J 9 >:<F E@B8:' E ' E@8LG8C58B69 8?8: 6 57F8 $ @ 5;7 ' G< 757<@ ;8 6<<I8B B<J@ ><:' <F8 F<F8@5 0 @B 5;8@0 J75;<E5 ' J<:B0 5E:@8B ;7 ' ;8 B @B 6<<I8B0 5 E $ 7 ' > C8 ' ; ?8 8LG:8 8B GG:8;8@ 7<@ <:' 6 :F0 =E5 75 C8:5 7@69 B7B @<5 ;<J0 ;<G8 <:' !<9$) 8 68 :@8B 5; 5 5;8:8 J '@< F8 @ ' <> A8557@A B<J@0 @B 5; 5 J8 FE 50 7> J8 J @58B 5< G '750 !EFG C:< '<@ 5< @E@ 5 =68 =6<CI '<@ 5;8 <5;8:' 7B8$ 5 J ' B8C7B8B 5; 5 75 ;<E6B =8 B<@80 @B 7F8:0 F 5;' '6 :A8:' 8L58@5 <> :<G8 5; @ E E 60 !EFG8B0 5;8 :<CI' J 98B ' ;8 C F8 B<J@ EG<@ 750 =E5 ;8 C6E5C;8B ' 6 :A8 F ' J75;' =<5;' :F ' @B =:<EA;5 ;7F 86> 5< @C;<:$; 5 J;7C;' J ' =<5;' B7>>7CE65 @B B @A8:<E ' ><:' 5;8 >7: 5 F @ J ' 8 9 8@<EA;' ><:' 5;8 <5;8: 0 @B J8 A<5 C:< ' J75;' 68 ' 5:<E=68 5; @ ' 8LG8C58B0 57FE6 58B =9 :<SR ' G8:>8C569 !E 5 <= 8:? 57<@0 5; 5 7> J8 C<E6B@R A85 C:< ' 5;8:8 J8 J8:8 @<5 67I869 5< A85 B<J@ 5;8 <5;8:' J 9$

) 8 ; B @<J' ::7?8B 5 0 @B C<E6B @< 6<@A8:' C<@57@E8 <@ 5;8 : 580 < J8 C<F F8@C8B B8 C8@B7@A 5;8 > C8 A 7@$ 8><:8 6<@A J8 J8:8 C6< 8 5< 5;8 C;:E@B0 =E5 E@ =68 5< 88 J; 5 75 J 67I8 5 5;7 ' G :50 ' 5;8 EGG8:' 8BA8 =8@5 <?8:$ J< ;<E: ' ; B 6:8 B9 G 8B 7@C8 68 ?7@A 5;8 F@F750 @B 75 =8A @ 5< =8 ;7A;69 G:<= =68 5; 5 J8 ;<E6B ; ?8 5< G8@B ' @7A;5 <@ 5;8 &6 C78:' 6 @C$ 7F8:0 J ;< 985 68B0 CE5 58G ' :7A;5 B<J@ 5< 5;8 8BA80 =E5 576 ;8 C<E6B @<5 88 =86<J0 5;8:8><:80 J :@7@A E ' 5< ;<6B 57A;50 ;8 F B8 ;7 ' J ;<68 =<B9 :7A7B0 @B M 5 @B7@A 7@ 5;8 6 :A8 58G J ;7C;' ;8 ; B CE5 ><:' 5;8 GE:G< 8N0 ; B 5;8 EGG8:' G :5 <> ;7 ' G8: <@ 6<J8:8B <E5 E@576 ;8 J' J ; 5 ;8 J @58B$ 8 ;<E58B 5; 5 <E:' J<: I' J ' >7@7 ;8B0 F B8 F8 C<F8 C6< 8 5< 5;8 8BA8 @B E@578 F 9D 86> B? @C8B 5;8 <5;8: ' E@576 ;8 ; B :<G8 8@<EA;0 @B 5;8@ J75;' ' 6<EB G ' !EFG8B B<J@ <@ 5< <>5 @<J$:569 =9 I766 @B

G :569' =9' 6EC I' =8' ; B' ;75' 5;8' C:8? 8' 5' 75 ' 8 78 5' G<7@50' @B' J8' ; B' <@69' 5<' F I8' ' B<J@J :B'!E F G' <>' 87A;5' <:' 58@' >885$

5' 7 ' @<J' 202 ' $ $0 J8' ; B' =88@' F<:8' 5; @' 87A;5' ;<E: ' @B' ' ; 6>' CC<FG67 ;7@A' 5;8' C8@5' <>' 5;8' >7@ 6' G8 I0' J;7C;0' CC<:B7@A' 5<' @' <= 8:? 57<@' =9' :$ <@@89' 7@' Q0' 7 ' <@69' Q ' >885' ;7A;$P' ' E:7@A' 5;7 ' G8:7<B' J8' ; B' @<5' 5<GG8B' ><:' F<:8' 5; @' ; 6> ' @B7<E:0' @B' <E:' @8:?8 ' @B' FE C68 ' ; B' =88@' I8G5' 5' 5;8' ;7A;8 5' B8A:88' <>' 58@ 7<@' 5;8' J;<68' 57F8$ 5' F 9' =8' E@ A7@8B' 5; 5' J8' CC8G58B' 5;8' <:B7@ :9' C<@B757<@ ' <>' A6 C78:' 5: ?8667@A' ' @' A:88D =68' :8678>0' @B' 5; 5' 5; 5' J677C;' 5' @<5;8:' 57F8' F7A;5' ; ?8' 88F8B' ><:F7B =68' J8' 5:8 58B' ' 5;8' ?8:78 5' = A 58668$ 58' 7@' 5;8' B 9' ' 75' J 0' @B' <>5' ' J ' 5;8' @<J0' J8' GE5' <@' EC77' G C8' 5; 5' ?8 :8 C;8B' 5;8' <6' B8 ' C:7@ ' 7@' 68 ' 5; @' ><:59' F7@E58 $) 8' 6< 5' @<' 57F8' 7@' :: @A7@A' <E:' = AA A80' ><:' ?8 ; B' 5766' 5<' 5: ?8: 8' ' 6<@A' A6 C78:0' @B' 5<' A85' C68 :' <>' 5J<' 7C > 66 ' =8><:8' 75' ? ' B :I0 <0' 5' $ ' J8' :8 EF8B' 5;8' F :C;0' B!<E:@7@A' 8 57@A' @B' B:7@I7@A0' @B' GE5' <@' ' GE:5' J;7C;' 5<<I' E ' C68 :' <>' 5;8' &6 C78:' 6 @C' =9' 1$2 ' G$ $>') 8' A<5' C68 :' <>' 5;8' F<: 7@8' <>' 5;8' &6 C78:' ;7<7:' 5' $2 0' !E 5' ' 5;8' 6 5' :8F@ @5' <>' B 967A;5' ? @7 ;8B$:<S' @B' F9 86>' ?8:8' ' 5:7>68' 7@' B? @C8' <>' 5;8' <5;8: 0' @B' ><:5E@ 5869' <' ><:' E 0><:' ' 5;89' +8:8 =<E5' 5<' C<FF8@C8' 5;8' B8 C8@5' <>' 5;8' @<E5' <>' 5;8' A6 C78:0' 5;8' ?;<68' <>' 5;8' F<: 7@8' 5; :8 58B' <@' 75 ' > C8' G8868B' <>0' @B' C F8' B<J@' J75;' ' 5:8F8@B<E ' :< :$

) 8' ; B' -' 5;8' G68 E:8' <>' ? 6I7@A' <?8:' ' G6 7@' 5; 5' 7 ' ?@<J@' =9' 5;8' @ F8' <>' 5;8' :8' B8' B F8' :680' C<?8:8B' @667 G8==68 ' <>' 66' 7S8 0' @B' 7@58: 8C58B' =9' @EF8:<E ' F 66' 5:8 F ' <:' 5<::8@5 $?8:9' ;<68' 6<<I8B' 67I8' ' 5<@80' 8?8:9' 5<@8' 67I8' ' ;<680' @B' J8' 5EF=68B' =<E5' >:<F' 7B8' 5<' 7B8' :/7576' <E:' 67F=' @B' <7E' 58FG8:' =8C F8' 5;<:<EA;69' ! B8B$ 9' C<FG @7<@ 0' =8E7A' =<5;' ;<:5 7A;58B0' ><E@B' 5;8' 5: ?8667@A' 8 G8C7 669' B7 A:88 =68' 0 <

P' 88' ?<6$ 7$0' G$ 1 0' '8 2 ' F ' C<@ 7B8:8B' 5678' ;87A;5' 7A@8B' 5<' 5;8' >7@ 6' G8 I' =9' :$ <@@89' ? ' 5<<' F 660' @B' 5;<EA;5' 75' ;<E6B' ; ?8' =88@' Q ' >885

5' ;8' &6 C78:' 6 @C' 7 ' 7@' 5;8' B7:8C57<@' 7@B7C 58B' =9' 5;8' ::F?' =86<J' 5;8' 68558:' ' <@' 5;8' <E567@8' <@' G$ Q Q$ "

5;8:8' J ' 675568' J<@B8:' 5; 5' J;8@' J8' C F8' EG<@' ' ;EA8' F ' <>' :<CI' '=7A' ' ';<E 80' J;7C;'; B'> 668@'>:<F'5;8'>6 @I'<>' 86?<EL0' ':8AE6 :' CE=8'5; 5' <>>8:8B'@<' ;8658:' J; 58?8:0 <<:8' C:78B'<E5'7@' 8C 5 90' Z ;0';<7?B867A;5>E6'5;8'?8:9'5;7@A'' '; ?8' =88@'6<@A7@A' ><:$ 85' E' ; ?8' 'G8:>8C569'8L58FG<: @8<E'=7?<E C$3 ;7 0' 75' ;<E6B'=8' 7B0' J 'J;8@'5;8'@7A;5'5;:8 58@8B'5;E@B8:' @B' 67A;5@7@A0' : 7@0' @B' 66' <5;8:'B867A;5 $

;8' G68 E:8'<>' 'G8:>8C569'8L58FG<: @8<E'=7?<E C'E@B8:'5;8 8' C7:CEF 5 @C8'@<5' =87@A'@<?86578'5<' :<S' @B' F9 86>0' J8' 5;<EA;5' J8' J<E6B'5:9'><:'5;8' F7 8:78'<>' ':<<>0'=E5') 6I8:' @B' 7F8:0'J75;' 5;8@' E E 6' A<<B' @ 5E:80' B8C6 :8B'75' J '5;8' ?8:9'5;7@A'5; 5'5;890' 5<<0' J8:8'6<@A7@A'><:'0 <'5;8'5:7<:8 <6?8B'5<' 5<G$) 8' A8@8:<E 69' 68>5'5;8F' 66'5;8'G:<?7 7<@'M 'B<S8@' CE=7C' 7@C;8'<:'5;8:8 =<E5'<>' = C<@'>50' @B';6>' 'C @B68N0' @B' GE ;8B'<@'><:'5;8'C; 685'<>' 68' >:<7B80' <:' 5'68 5' J8'5;<EA;5' J8' B7B0'=E5'C<E6B'@<5'=8'C8:5 7@$ @' 5;8'C<E: 8'<>'; 6> @ ;<E:' J8' A<5' E@C<F F<@69'C6< 8'5<' 5;8' F 7@' 5<::8@50' @B' :<S' 66' 5'<@C8'B7 GG8 :8B$ ' 58GG8B'C E57<E 69'><:D J :B'5<' G88:' B<J@' 7@5<' 5;8' G6 C8' J;8:8' ' 5;<EA;5' ;8' J 0' @B' HE78569'5E F=68B' ;8 B' <?8:' ;886'7@5<' '=7A':;<B<B8@B:<@'=E ;$ L5:7C 57@A'F9 86>'J75;' <F8'5:<E=680' '>866'= CIJ :B'<?8:' <F8' :<CI 0' @B' A<5' J8BA8B'7@' 'C68>5' <' C6< 8'5<'5;8'5<::8@5'5; 5'75' G6 ;8B' 66'<?8:' F8$

;8' C<66<HE9'J;7C;'5;8@' 8@ E8B' F7B'5;8'5;E@B8:7@A'<>'5;8' 5:8 F'J ' '><66<J '[K

Z E66<0' :<S' 3 Z ;0' <@ 78E:$3 Z);8:8' :8'9<E^3 Z 8:80' <@ 78E:$3 Z);8:8' ';8:8'^3 Z 'B<@F5'I@<J'0 J;8:8' :8'9<E^3 Z 8:80' :<S' @B' <'<@$

;8'>C5'J 0'>:<F'57:8'7@58@ 8'B :I@8 0' @B'5;8'@<7 8'<>'5;8' 5<::8@50' J8';B'@<'7B8'<>'8 C;'<5;8:R' 75E 57<@'0 7@'5;8'C<E: 8'<>' 58@'F7@E58 0';<J8?8:0' J8'!<7@8B'5<A85;8:' A 7@0' A:88B' J8';B' HE758'8@<EA;'<>'5; 5' I7@B'<>'5;7@A0' @B' B!<E:@8B'5<' 'F< 5'867A7=68' :<CI'5' $ $

<J'J866' ':8F8F=8:'5;8'@7A;5' 5'5; 5':<CI0' @B'5;8'!</9'J 9' 7@'J;7C;' :<S'C F8'<E5')8'J+8:C'=<5;'?8:9'J85' =<E5'5;8'68A $

and both uncommonly hungry, but the time passed pleasantly enough round our fire of juniper, and until long past midnight we sat up recounting, over our pipes, wonderful stories of the most incredible description, in which, I must admit, my companion beat me hollow. Then, throwing ourselves on our beds of rhododendron,

A NIGHT WITH CROZ.

we slept an untroubled sleep, and rose on a bright Sunday morning as fresh as might be, intending to enjoy a day's rest and luxury with our friends at La Ville de Val Louise.

I have failed to give the impression I wish if it has not been made evident that the ascent of the Pointe des Ecrins was not an ordinary piece of work. There is an increasing disposition now-a-days amongst those who write on the Alps, to underrate the difficulties and dangers which are met with, and this disposition is, I think, not less mischievous than the old-fashioned style of making everything terrible. Difficult as we found the peak, I believe we

6# 7* ' F)

5<<I' 75' 5' 5 ; 8' =8 50 G8 : ; G ' 5 ; 8' <@69'G< 7=6880 57F 8' <>' 5 ; +' 98 :$; 8' A:8 5' 6<G8' <@' J ; 7C ;' J8' G8@5' <' FEC ;' 57F 8' J 0 >:<F' =87@A' B8@EB8B' =9' 5 ; 8' ? 6 @C ; 8' <>' J ; 7C ;' ' ; ?8' G<I8@0 B8G:7?8B' <>' 75 ' A:8 58 5' B @A8:$ B' 75' ; B' 5 ; 8' @<J' 5766' :8 57@A' EG<@' 750 @B' ; B' J8' G8: 8?8:8B' J75 ;' 5 ; 8' 8LG8B757<@0 J8' ;<E6B' 6F< 5' J75 ;<E5' B<E=5' ; ?8' 8@B8B' J75 ;' C 6 F759'7@ 58 B' <>' ECC8 $; 8' 7C8' <>' 5 ; 5' 6<G8' 7 ' 6J 9 ' =86<J0 75 ' @A68' 7 ' 8?8:80 @B' 5 ; 8' :<CI ' B<' @<5' G:<D !8C5' E>>7C78@569' 5<' >><:B' 5 ; 8' EGG<:5' 5 ; 5' @<J' :8HE7:8B0 5<' =8' 5 =680 J ; 8@' 5' ' A:8 5' @A68$ <' > :' F' ' >:<F' B8 7:7@A' 5<' 58F G5' @9'<@8' 5<' :8G8 5' 5 ; 8' 8LG8B757<@0 5 ; 5' ' GE5' 75'<@' :8C<:B' ' F 9' =8678>0 ;<J8?8:' B' @B' ;<J8?8:' F7 8: =68' ' F @' F 9' ; ?8' =88@0 7>' ; 8' 7 ' ><E@B' <@' 5 ; 8' EF F75' <>' 5 ; 8' <7@58' B8 ' C:7@ ' >58:' ' > 66' <>' @8J' @<J0 ; 8' 7 ' 67I869' 5<' 8LG8:78@C8' F7 8:9' > :' B88G8:' 5 ; @' @95 ; 7@A' J75 ;' J ; 7C ;' ; 8' ; ' ;75 ; 8:5<' =88@' CHE 7@58B$P

P' ; 8' C8@5' <>' 5 ; 8' <7@58' B8 ' C:7@ ' ; ' =88@' F B8' <@C8' 7@C8' 20 =9' '4:8@C ;' A8@568F @0 @ F8B' 7@C8@51' J75 ;' 5 ; 8' ; F<E@7L' AE7B8 ' .8 @' ::78:' @B' 68L @B:8' <E:@78:$; 89' ><66<J8B' E:' :<E580 =E5' :8?8: 8B' 75' 0 5 ; 5' 7 ' 5<' 90 C8@B8B' =9' 5 ; 8' J8 58:@0 @B' B8 C8@B8B' =9' 5 ; 8' 8 58:@' :+58$

; 8' =8 5' C<E: 8' 5<' B<G5' 7@' >E5E:8' 55 CI ' <@' 5 ; 8' F<E@5 7@0 J<E6B' =8' 5<' =:7@A' ' 6 BB8:0 <:' <F8' <5 ; 8:' F8 @ ' <>' G 7@A' 5 ; 8' =8:A C ; :E@B0 7@' 75 ' C8@5:80 7F F8B7 5869' E@B8:' 5 ; 8' EF F75$ @8' C<E6B' 5 ; 8@' G:<C88B' B7:8C569' EGJ :B 0 @B' <' ?<7B' 5 ; 8' 6 =<E:' @B' B7>>7CE6578 ' J ; 7C ;' :8' 7@8?75 =68' EG<@' @9' C8@5' =9' J 9' <>' 5 ; 8' :858 $

3 2' 768>:<7B8'5<' 6 77LO'=E5'><:'5=8'G 5;O'5: ?86' J<E6B'=8' C :C869'
F<:8' 8 9'5; @' <?8:'5;8' :8' B8' B F8' :68$P' ;8' ? 6689'7 '
5:8J@' J75;'7F F8@ 8' F 8 ' <>' A@87 O' >:<F'5;8' 7S8'<>' '6 :A8'
;<E 8' B<J@J :B O' @B' 75' 7 ' <@69'<CC 7<@ 669'5; 5' :<CI' ' 2'7 '
88@O' <' C<?8:8B' EG' 7 ' 75' EG' =9'5;8' B8=:7 O' J ;7C;' 88F '5<' ; ?8'
=88@' B8:7?8B' 6F< 5' 8@57:869'>:<F'5;8' @87A;=<E:7@A'C67>> $ >

5' J ' E@B 9O' 'Z B 9' F< 5' C 6F' @B' =:7A;5$3 &<6B8@' E@D
67A;5' ; B' B7 G8: 8B'5;8'C6<EB O' @B' J ' A6<:7>97@A'5;8' ;87A;5 O' @B'
J8'><:A<5';E@A8:'5;:<EA;'5;8'=:7667 @C9'<>'5;8' F<:@7@A' @B'=8 E59'
<>'5;8' F<E@5 7@ $

) 8' F8 @5'5;8'Q 5;'5<'=8' 'B 9'<>':8 50'=E5'75'J '675568'5; 5' J8'
><E@B'7@'5;8' 3 '<>' 6 EB8'&7: EBO' @B'J8'>68B'=8><:8'5;8'= =86'
<>' <E@B'J ;7C;':< 8'7@'7@58@ 759' 'F8@'B8 C8@B8B'5<' 'B8G5;'J ;7C;'
7 'E@ 55 7@ =68'=9'5;8' =8 5 '<>'5;8' >786B0' @B'><E@B' 5'5;8'C; 685 '
<>' @5: 7AE8 '.'5;8'G8 C8'5; 5' ; B'=88@'B8@78B'5<' E ' 5' (6' <E7 8$

P' 4<:':<E580' 88'F G'7@'C; G$'7L$

>' =<E5' ; 6> 5F768' =<?8' 6 EL'5;8:8'7 ' 'G:8C7G75<E ' > 66' 7@'5;8'? 6689O' @B'
5;8:8'MJ;8:8'5;8'=8B':<CI'7 '5<<' 588G'5<' 66<J'B8=:7 '5<' CCE FE6 58M' $E ' 2 ='
'C @'=8' 88@$' 5'5;8' F8'G6 C8'5;8'5<::8@5'<>' 768'4:<7B8' > 66 '=9' <F8' 588G'
: G7B ' 5;:<EA;' ') 66 7B8B'A<:A8O' @B'5;8'><:F8:'8BB97@A ' <>'5;8' J 58:' C @'=8'
5: C8B';7A;'EG'EG<@'5;8'C67>> $

' ;8'G 5;'>:<F' (7668'B8' (6' <E7 8' 5<' @5: 7AE8 '7 ' A<<B' @B' J866' ; B8B'=9'
6ELE:7 @5'><67 A8$;8'? 6689'MBR E5: 7AE8 M'7 '@ ::<J'O =<:B8:8B'=9'>7@8'C67>> 'O @B'
C6< 8B' 5'75 ' J8 58:@' 8@B' =9' ' @<=68'=6<CI'<>' F<E@5 7@ O' J ;7C;'6<<I ' FEC;' ;7A;8:

A 7@ J8 J8:8 :8C87?8B J75;' 5;8 F< 5 C<:B7 6 ;< G75 6759$?8:95;7@A 5; 5 J ' 8 5 =68 <:' B:7@I =68 J ' =:<EA;5 <E5 @B G:8 8B EG<@ E ' 0 8?8:9 675568 CE:7< 759 J ' 8L;7=758B 0 8?8:9 7@D ><:F 57<@5; 5 C<E6B =8 >><:B8B J ' A7?8@ 0 @B J;8@ J8 :857:8B 5< <E:' C68 @ 5: J0 J8 A 7@ C<@A: 5E6 58B 8 C;' <5;8:'5; 5 J8 ; B 8 C G8B >:<F 5;8 ><E6 B8@ J;7C;' 7 ' J;8:8 ' A<<B 7@@ ;<E6B =80 @B ; B C 5 7@ <E:' 6<5 J75;'5;< 8 J;< BJ866 7@ C; 685 $ (8:9 6ELE:7<E ' 5; 5 5: J' 88F8B >58:'5J< @7A;5 ' EG<@ HE :5S G8==68 ' @B A6 C78:' FEB0 @B ' >865 HE758 AA?78?8B M8LG8C57@A 75 J ' 5;8 EF F<@ '><:' B8G :5E:8N J;8@0 =<E5 F7B@7A;50 5;8 ;8 ?9 J<<B8@ B<<:' C:8 I8B <@ 75 ' ;7@A8 0 @B ' F @ ;8FRB @B" ; RB 5< 55: C5 558@57<@ 0 =E5 J;8@ 75 J;7 G8:8B0 <@ 78E:' B? :B0Y ' G8:+ C87?8B F9 F7 5 I80K 75 J ' <E:' 86?<EL C<FG @7<@0 <@ 78E:' 89@ EB0 5;8 8LC8668@5 ' = '<>' ' 8 78$

<@ 78E:' 89@ EB ; B =88@ 7@?758B 5< CC<FG @9 E ' <@ 5;8 8LCE: 7<@ 5; 5 7 ' B8 C:7=8B 7@ 5;7 ' C; G58:0 =E5 ; B ::7?8B 5 (6 <E7 8 >58:' ?8 ; B 68>50 @B ; B 8@8:A857C 669 GE: E8B E ' BE:7@A 5678 @7A;5$ E:' 7B8 ' J ' 5; 5 ' G ' F7A;5 =8 F B8 <?8:'5;8 ;7A;' :7BA8 C 668B M<@ 5;8 :8@C;' F GN :758 B8 < E> ' <EA8 0P @8 :' 5< 5;8 G8 I' @ F8B 8 ' @ 0 J;7C;' F7A;5 =8 5;8 ;<:58 5 :<E58 7@ 57F8 M ' 75 C8:5 7@69 J<E6B =8 7@ B7 5 @C8N >:<F (6 <E7 80 C:< ' 5;8 8@5: 6 ' EG;7@B 6G $) 8 ; B 88@ 5;8 @<:5;8:@ M<:' 76 558N 7B8 >:<F 5;8 :+C;8 B8 6 ' 87!80 @B 75 88F8B 5< =8 G: C57C =68 5 <@8 G6 C8 @8 :' 5;8 =<?8 F8@57<@8B F<E@5 7@$ <:8 5; @ 5; 5 C<E6B @<5 =8 5<6B 5 ' B7 5 @C8 <>

567 @75'7 $ 678;7A;8 5 G<7@5M5;8 7C B8 <77?<7 7EN7 ' 0 '>885$ <5 5<8 0 G78 0 @B <5;8:' ?8A85 =68 0 :8 A7 <J@ 5 @5: 7AE8 ' M Q '>885N0 65;<EA;' 5;8 75E 57<@ <>' 5;8 C; 685 '7 ' =68 I0 @B CE5 <>'>:<F' 5;8 77@$

;8 <F=8 M<:' (66<@N B8 6 ' 8668 !<7@ ' 5;8 F 7@ ? 6689 5 @5: 7AE8 0 @B <@8 C @ G '>:<F' 5;8><:F8:' =9 5;8 675568 I@<J@ <6 B8 <EG M7F F8B7 5869 5< 5;8 <E5;' <>'5;8 7C B8 <@ F7 7@N 7@5< 5;8 (6 &<B8F :$ ' <5;8:' G 8 0 =<5;' <>' C<@ 7B8:D =68 ;87A;50 68 B'>:<F' 5;8 ;8 B <>'5;8 (66<@ B8 6 ' 8668 7@5< 5;8 ? 6689 '<>' ; FG<' ><@ @B :A8@578:8$

Z ;7 0 671 8 F @9 <5;8:' @ F8 ' A7?8@ 5< F<E@5 7@ ' @B A6 C78: '<@ ;885 0 7 ' @<5 '6<C 6 @ F8 0 <:0 5 68 50 7 '@<5 <@8 5; 5 7 ' 7@ C<F F<@ E 8$

QQ2 ! "(!' ! ' 4 ' (!

868?8@' F768 $') 8' 7@58@B8B' 5 ' 5:9' 5<' ;75' ' G<7@5'' <@' 5;8' :7BA8' 7F F8B7 5869' =<?8' 5;8' G :5' J;8:8' 75' 88F8B' 5<'=8' 8 78 5$

) 8' 68>5' @5: 7AE8 ' 5' $ ' <@' 5;8' F<:@7@A' <>' .E@8' Q1(' @B' G:<C88B8B(' <?8:' ?8:9' A8@569 7@C67@8B' A:<E@B(' 5<J :B ' 5;8' ><<5' <>' 5;8' 7C' B8' <@?<7 7@' M><66<J7@A' 7@' ;' 5;8' :<E58' <>' 5;8' <6' B8' 866 :+' J;7C;' 68 B ' >:<F' 5;8' (6' <E7 8' 7@5<' 5;8' (6' &<B8F :N @B' 5' ' $ $(' >7@B7@A' 5; 5' 5;8:8' J ' @<' C; @C8' <>' <=5 7@7@A' ' ?78J' >:<F' 5;8' =<55<F' <>' 5;8' ? 6689' <>' 5;8' :7BA8' <?8:' J;7C;' <E:' :<E58' J 'Z<'=8' 5 I8@(' 8@5' 7F8:' EG' 5;8' 6<J8:' 6<G8 ' <>' 5;8' <@?<7 7@' 5<' :8C<@@<75:8$ 8' 5868A: G;8B' 5; 5' J8' F7A;5' G:<C88B'! @B' 5' $2 ' J8' HE7558B' 5;8' @<J =8B ' 5' 5;8' =<55<F' <>' 5;8' ? 6689' ><:' 5;8' 6<G8 ' J;7C;' :< 8' 5<J :B ' 5;8' @<:5;$

;8' C<E: 8' J '%$%$) $(' @B' J 'G:<B7A7<E 69' 588G$') ' ' $ ' 9 ' (' E ' &' 2 ' 9 ' ' ' ' &' 3 2 ' $ '$ ' E5' 5;8' :<E58' J ' <' > :' >:<F' =87@A' @' 8LC8G57<@ 669' B7>>7CE65' <@8(' 5; 5' 5' $2 ' J8' 5<<B' <@' 5;8' EF F75' <>' 5;8' G (' ; ?7@A' F B8' @' C8@5' <>' F<:8' 5; @' ' >885' 7@' >7?8' ;<E: (' 7@C6E 7?8' <>' ; 65 $

/G<@' ;885' ' <>' 5;8' 4:8@C;' F G' ' A6 C78:' 7 ' 6 7B' B<J@' <@' 5;8' <E5;' <>' 5;8' : 58' B8 ' <8E> ' <@A8 (' 8L58@B7@A' 6<@A' 5;8' 8@57:8' 68@A5;' <>' 5;8' :7BA8(' 5' 75 ' ><<5(' >:<F' @ 5' 5<' J8 5$ @' 2' 5;7 ' A6 C78:' B7B' @<5' 8L7 5' ' ' A6 C78:(' =E5' 7@' 5;8' G6 C8' J;8:8' 75' ;<E6B' ; ?8' =88@' 5;8:8' J8:8' 8?8: 6' F 66' <@8 (' 66'' <>' J;7C;' J8:8(' ' =8678?8(' 8G : 58B' >:<F' 8 C;' <5;8:$ >

) 8' C<F F8@C8B' 5;8' C8@5' >:<F' 5;8' (6' BR @5: 7AE8 (' 5<' >;8' J8 5' <>' 5;8' F< 5' J8 58:@' <>' 5;8 8' F ' A6 C78: (' @B' HE7558B' 5;8' ? 6689' =9' 5;8' >7: 5' A:8 5' A G' 7@' 75 ' C67>> ' >58:' 5; 5' A6 C78:' J ' G 8B$) 8' B7B' @<5' 5 I8' 5<' 5;8' 7C8' E@5B' 75' >><:B8B' @' 8 78:' :<E58' 5; @' 5;8' :<C I (' 5;8@' M $ N' :<S' J8@5' 5<' 5;8' >:<@5(' @B' 68B' J75;

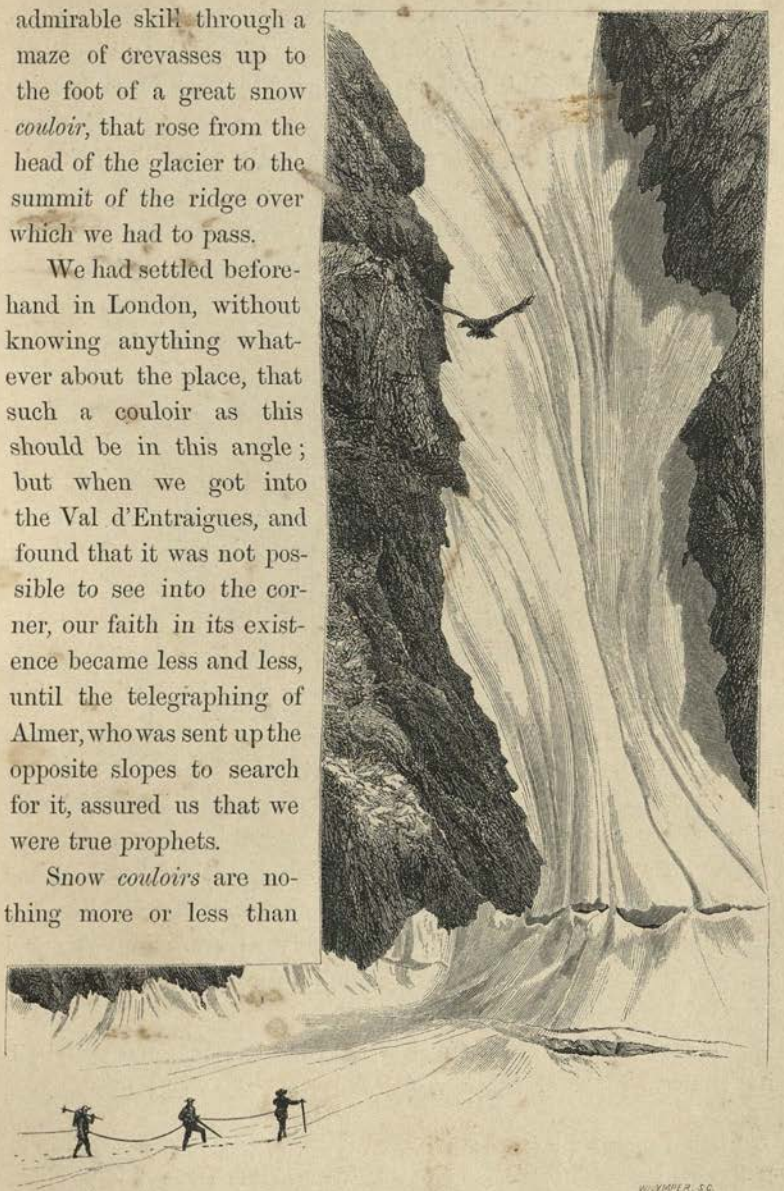
P' ;8' ;87A;5'<>' <6' B8' 866 :'M<:B8' 86 :N7 ' 0 1 ' >885'M4<:=8 N$ ' J ' 5<6B' =9'G8 @5 ' 5' @5: 7AE8 ' 5; 5' ;88G' @B'A< 5 ' C @' =8' 8 769' 5 I8@' C:< ' 75$

>' 88' F G' <@' G$ Q Q$ 5' 7 ' G8:; G ' !E 5' G< 7=68(' 65;<EA;' 7FG:<= =68(' 5; 5' 5;8 8' 675568' A6 C78:' J8:8' E@758B' 5<A85;8:' 5' 5;8' 57F8' 5; 5' 5;8' E:?89' J ' F B8$ 7@C8' 5;8@' 5;8' A6 C78:' <>' ' EG;7@8' M ' 5;:<EA;<E5' 5;8' 6G ' A8@8: 669N' ; ?8' ;:E@I' ?8:9' C<@ 7B8: =69$ ' @<5 =68' B7F7@E57<@' 5<<I' G6 C8' 7@' 5;87:' 7S8' 7@' (' J;7C;' J ' 55:7=E58B' =9' 5;8' @ 57?8 ' 5<' 5;8' ?8:9' ;8 ?9' : 7@ ' <>' 5; 5' 98 :$]

admirable skill through a maze of crevasses up to the foot of a great snow *couloir*, that rose from the head of the glacier to the summit of the ridge over which we had to pass.

We had settled beforehand in London, without knowing anything whatever about the place, that such a couloir as this should be in this angle; but when we got into the Val d'Entraigues, and found that it was not possible to see into the corner, our faith in its existence became less and less, until the telegraphing of Almer, who was sent up the opposite slopes to search for it, assured us that we were true prophets.

Snow *couloirs* are nothing more or less than



A SNOW COULOIR.

AE6678 G :569>7668B =9 @<J$;89 :8 F< 5 E 8>E6 7@ 575E57<@ @ @B F 9=8C<@ 7B8:8B 9 @ 5E: 6 ;7A;J 9 G6 C8B@=9 I7@B :< +BB8@C8@ 7@ C<@?8@78@5 75E 57<@ ><: A8557@A <?8: G6 C8 J;7C; J<E6B 5;8:J7 8 =8 7@ CC8 7=68$;89 :8 ! <9 5< 5;8 F<E@D 5 7@88:@ @B@>:<F > :@ E:8 ;7F <> G 5; J;8@ 66 ;8 7B8 7 75@C8:5 7@ @ =E5 5;89 :8 A:78> 5< @<?7C8 @ J;<@ J;8@ EG<@ 588G @<J@ :8 E E 669 87S8B J75;5J<@<57<@ K>7: 50 5; 5 5;8 @<J J766 67G@ @B 8C<@B69@ 5; 5 5;< 8 J;< :8 EG<@ 75 FE 5 67G 5<<$

%<5;7@A@ G8:; G @ C<E6B 6<<I FEC; F<:8 E@G:<F7 7@A 5< 5;< 8 J;< B< @<5 I@<J 5;8 ?7:5E8 <> C<E6<7: 5; @ EC; G6 C8 5;8 8@A: ?7@A :8G:8 8@5 0P @B 7> G8: <@ 7@8LG8:78@C8B 7@ F<E@5 7@ C: >5 ; B <CC 7<@ 5< C:< :7BA8 <:5< C67F=:<CI @ 7@ J;7C; 5;8:8 J8:8 EC; C<E6<7: @ 5;89 J<E6B 7@ 57@C57?869 ?<7B 5;8F$ E5 G: CD 57 8B F<E@5 7@88: J<E6B @ 5E: 669 6<<I 5< 5;8F><: G 5;@ @B J<E6B><66<J 5;8F 6F< 5 F 558:<> C<E: 8@ E@68 5;89 5E:@8B <E5 5< =8 >7668B J75; 7C8@ <: 5<< FEC; J8G5 =9> 667@A 5<@8 @ <: 5;8 :<CI 5 5;8 7B8 G:<?8B 5< =8 <> EC; @ 8LC8G57<@ 6 C; : C58: 5< >><:B @ 8 78: G 5; 5; @ 5;8 @<J$

<E6<7: 6<<I G:<B7A7<E 69 588G J;8 88@ >:<F 5;8 >:<@5@ @B@ <?78J8B@ 75 7 7FG< 7=68 5< =8 C8:5 7@ <> 5;87: 7@C67@ 57<@ J75;7@ F @9 B8A:88 $ @<J@ ;<J8?8:@ B<8 C5E 669 678 5 588G8: @A68 7@ C<E6<7: 5; @ 7@ @9 <5;8: 75E 57<@ 0K MKL 5< B8A:88 7 @<5 @ E@C<F F<@ 7@C67@ 57<@$?8@ 5 EC; @A68 @ 5J<F8@ J75; G:<G8: L8 C @ F<E@5 <@ @<J 5 5;8 : 58 <> 1 5< >885 G8: ;<E:$;8 F8 F<E@5 C @ <@69 =8 CC<FG67 ;8B 7@ 5;8 F8 57F8 <@ 588G :<CI J;8@ 5;89 :8 <> 5;8 ?8:9 8 78 5 C; : C58:@ @B ><E: <: >7?8 ;<E: F 9 =8 :8 B769 G8@5 EG<@ @ 8HE 6 ;87A;5 <> B7>>7CE65 :<CI $ @<J C<E6<7: :8 5;8:8><:8 5< =8 C<FD F8@B8B =8C E 8 5;89 8C<@<F7 8 57F8$

> C<E: 8@ 7@ 66 AE6678 @ <@8 7 67 =68 5< ;8 8@C<E@58:8B =9 > 66D 7@A 5<@8 $ < 5 <> 5;< 8 J;7C; > 66 >:<F 5;8 :<CI <> C<E6<7:$

P ;7 B: J7@A J F B8 5< /7E 5: 58 5;8 :8F :I J;7C; ><66<J$ 5 B<8 @<5 :8D G:8 8@5 @9 G :57CE6 :C<E6<7:@ =E5 75 J<E6B 8:?8@ 5<68: =69 J866@ G<:5: 75 <> 5;8 <@8 J;7C; J8 C8@B8B J;8@ C:< 7@A 5;8 <6 B8 76 558$

<<@8:' <:' 6 58:' G7@' B<J@' 5;8' @<J' J;7C;' >766 ' 5;8' 5:<EA;' 0 @B0 ' 5;87:' C<E: 8' @B' G C8' :8' F<:8' C68 :69' GG :8@5' J;8@' > 667@A' <?8:' @<J' 5; @' J;8@!E F G7@A' >:<F' 68BA8' 5<' 68BA80' G8: <@ ' J 7567' 67?869' 7F A7@ 57<@ ' :8' :8 B769' 7FG:8 8B' ;9' 5;8F$;8' A:<<?8 ' J;7C;' :8' E E 669' 88@' J @B8:7@A' B<J@' 5;8' 68@A5;' <>' @<J' C<E6<7: ' :8' B88G8@8B' M @B0 G8:; G 0 <CC 7<@ 669' <:7A7@ 58BN ;9' > 667@A' 5<@8 0 @B' 5;89' :8' <F857F8 ' G<7@58B' <E5' ;9' C E57<E ' F8@' ' :8 <@ ' J;9' C<E6<7: ' ;<E6B' @<5' ;8' ><66<J8B$ ' 5;7@I' 5;89' :8' ?8:9' >:8D HE8@569' 0 <@69' A 7558: 0 C E 8B' =9' J 58:' 5:7CI67@A' <>' 5;8' :<CI $);85;8:' 5;7 ' 7 ' <' <:' @<50 <@8' ;<E6B' 6J 9 ' C<@ 7B8:' 5;8' G< 7D =76759' <>' =87@A' 5:ECI' =9' > 667@A' 5<@8 0 @B0 7@' <:B8:' 5<' 68 8@' 5;8' :7 I' ' > :' ' G< 7=680 ;<E6B' F<E@5' EG<@' 5;8' 7B8 ' <>' 5;8' @<J0 @B' @<5' EG' 75 ' C8@5:8$ 5<@8 ' 5; 5' C<F8' <>' 5;8' :<CI ' 5;8@' >69' <?8:' <@8R ';8 B0 <:'=<E@B' B<J@' 5;8' F7BB68' <>' 5;8' 5:<EA;' 5' ' >8' B7 5 @C8$

5' $ ' $ $ J8' C<F F8@C8B' 5;8' C8@5' <>' 5;8' C<E6<7:' 68 B7@A' >:<F' 5;8' @ F868 ' A6 C78:' 5<' ' G<7@5' 7@' 5;8' :7BA80 !E 5' 5<' 5;8' 8 5' <>' <@5' @ $P' <' > :' 5;8' :<E58' ; B' =88@' @<5;7@A' F<:8' 5; @' ' 588G' A:7@B' 7@' @' @A68' J;8:8' 675568' C<E6B' =8' 88@0 =E5' @<J' ?78J ' <G8@8B' <E5' 7@' 8?8: 6 B7:8C57<@ 0 @B' 5;8' J 9' =8A @' 5<' =8' 7@58:8 5D 7@A$ 5' J ' F<:8' <0 G8:; G 0 5<' E ' 5; @' 5<' <E:' C<FG @7<@' $ 89@ EB0 J;<' ; B' @<' :8 5' 7@' 5;8' 6 5' @7A;5$ 8' J 0 F<:8<?870 ;8 ?769' 6 B8@$ C78@C8' J ' 5<' =8' :8A :B8B K;7 ' G<CI85 ' J8:8' 5E>>8B' J75;' =<<I 0 ;87A;5 '$ @B' @A68 ' J8:8' 5<' =8' <= 8:?8B K';7 ' I@ G CI' J ' >7668B' J75;' 7@ 5:EF8@5 ' 0 ;E@A8:' J ' 5<' =8' AE :B8B' A 7@ 5K;7 ' ;<E6B8:' J8:8' <:@ F8@58B' J75;' ' ;EA8' @7F=E ' <>' =:8 B0 @B' '68A' <>' FE55<@' JE@A' =8;7@B' >:<F';7 ' I@ G CI0 6<<ID 7@A' 67I8' @' <?8:A:<J@' 5 76$ 7I8' ' A<<B ;8 :58B' >866<J0 ;8' ; B' =:<EA;5 5;7 ' ><B0 5;7@I7@A' J8' F7A;5' =8' 7@' @88B' <>' 75$ ' 75' ; GD G8@8B0 J8' J8:8' J866' G:<?7B8B' ><:0 @B' ; ?7@A' <E:' <J@' G CI ' 5<' C ::90 C<E6B' @<5' :8678?8' ;7F' <>' ;7 ' EG8:>6E<E ' =E:B8@ 0 J;7C;0 @ 5E: 6690 ;8' B7B' @<5' 67I8' 5<' 5;:<J' J 9$ ' 5;8' @A68 ' 588G8@8B$

P' ;8' EGG8:' G :5' <>' 5;8' <E5;8:@' 7B8' <>' 5;8' <6 B8' 76 5580 @B' 5;8' F 66' A6 C78:' G<I8@' <>' <@' G$ QQ20 C @' =8' 88@' >:<F' 5;8' ;7A;' :< B' 68 B7@A' >:<F' :7 77 ;<@ 5<' <@5 ' EG;7@0 =85J88@' 5;8' Q5;' @B' 5;' I76<F85:8' $ 5<@8 ' M>7R<F' :7 @ <@N$

5678$ 5: 7@ <@ ;7 5:8@A5; =8C F8 F<:8 @B F<:8 GG :8@5$ 5 6 5 ;8 =8A @ 5< A:< @$ 5 >7: 5 F< 5 A8@568 @B F866<J A:< @ =E5 J8 :< 8 < B7B ;7 A:< @ 5766 5 6 5 5;8 C67>> J8:8 A:< @7@A 7@ 8C;< @B J8 J8:8 F<?8B 5< 6 EA;58:$

:<S CE5 5;8 J 9 J75; E@>6 AA7@A 8@8:A9 5;:<EA;<E5 5;8 J;<68 <> 5;8 C8@5 @B 5 $2 J8 5<<B <@ 5;8 EF F75 <> <E: G 7@58@B7@A 5< :8>:8 ; <E: 86?8 J75; A<<B ; 65 =E5 !E 5 5 5; 5 F<F8@5 F7 5 J;7C; ; B =88@ G6 97@A =<E5 5;8 :7BA8 J<<G8B B<J@ @B =6<558B <E5 5;8 J;<68 <> 5;8 ?78 J <@ 5;8 @<:5;8:@ 7B8$:<S J 5;8 <@69 <@8 J;< C EA;5 A67FG 8 <> 5;8 B8 C8@5 @B 75 J B88F8B B?7 =68 5< GE ;<@ 7F F8B7 5869 J;768 75 :8C</8C57<E JR >:8 ; 7@ ;7 F8F<:9$) 8 :8 C<@ 8HE8@569 E@ =68 5< 58/ @95677@A =<E5 5;8 EF F75 <> 5;8 G 8LC8G5 5; 5 75 ;8 7F F8D B7 5869 5< 5;8 8 5 <> <@5 @ @B 7 868? 58B =<E5 0 >885 =<?8 5;8 68?86 <> 5;8 8 $ 5 7 5;8 ;7A;8 5 G 7@ ' EG;7@8$) 8 C 668B 75 5;8 <6 B8 76 558$

) 8 C<F F8@C8B 5< B8 C8@B 5<J :B 5;8 &6 C78:B8 76 558 ;9 6<G8 <> F<<5; 7C8 5;8 > C8 <> J;7C; CC<:B7@A 5< $ F8 E:8D F8@5 <> :$ <<:8 ; B @7@C67@ 57<@ <> KMLQ :<S 5766 68B @B 5;8 <5;8: >< 66<J8B 5 7@58:? 6 <> =<E5 >885 66 =87@A 578B 5<A85;8: @B =@8: <CCEG97@A 5;8 :8 G<@ 7=68 G< 757<@ <> 6 5 F @ 5;8 5J< AE7B8 J8:8 5;8:8><:8 =<E5 1 >885 G :5$;89 J8:8 HE758 7@?7 7=68 5< 8 C; <5;8: >:<F 5;8 F7 5 @B 6<<I8B G8C5: 6 8?8@ 5< E $ E5 5;8 5:<@A F @ C<E6B$;8 ;8 :B =9 66 ;8 J7@A <E5 5;8 58G =86<J J;768 8?8:9 @<J @B 5;8@ 5;8 ?<7C8 <> 5;8 58 B9 F @ G78:C8B 5;8 C6<EB0 K Z 67G @<5 B8 : 7: 6 G6 C8 J866 9<E: >8850 5E @<5 E@576 9<E :8 C8:5 7@$3

4<: 5;:88 HE :58: <> @ ;<E: J8 G:<A:8 8B 7@ 5;7 > ;7<@$;8 L8 <> :<S 66 5 <@C8 5<GG8B$ Z) ; 5 7 5;8 F 558: :<S [A Y 8:A C;:E@B 8A8@568F8@$3 Z @ J8 A85 <?8: ^3 Z /G<@ F9 J<:B B<@R I@<J 5;7@I J8 FE 5 !EFG$3 ;8 C6<EB <:</8B J 9 :7A;5 @B 68>5 ;8 G<I8$;8 8>>8C5 J B: F 57C 5 J 2 $ G:8G : 5<:9 5< 5;8 ¢A:8 5 8@ 57<@ 68 G R J;7C; J =<E5 5< =8 8L8CE58B =9 5;8 8@57:8 C<FG @9$

"WE SAW A TOE - IT SEEMED TO BELONG TO MOORE - WE SAW REYNAUD A FLYING BODY."

<F8 E@ 88@ C E 8 <F8 C67>> <:"<= 5:EC57<@ 7@ 5;8 :<CI E@B8:@8 5;; B C E 8B <E:J 66 <> 7C8 5< G675 7@5< 5J< G<:57<@ @ 5;8 ;EA8 >7 E:8 J677C;; B5;E =88@><:F8B8L58@B8B@ <@8 C;; @B > :C<E6B =8 88@$)8 <@5;8 6<G8 =<?8 J8:8 8G $: 58B >:<F5;8 6<G8 =86<J=9 F7A;59C:8? 8$ %<:E@@7@A EG @B B<J@ 5< 6<<I><:@ 8 78:G6 C8 5<C:< C<E6B =8 B<@8 <@ @ 7C8 6<G8 <> 2`;5;8C; F; B 5< =8G 8B5;8@" @B5;8:8$

B<J@J :B!EFG <> <: >885 @B ><:J :B68 G <>1<: >885; B 5< =8F B8 5 5;8 F8 57F8$; 5 7 @<5 FEC;9<E J766 9$ 5 J @<5 FEC;75 J @<5 5;8 HE @5759 =E5 75 J 5;8 HE 6759 <> 5;8 !EFG J;7C;A ?8 5< 75 75 G :57CE6 : >6 ?<E:$ <E; B 5<;75 @ ::<J:7BA8 <> 7C8$ > 5; 5 J G 8B 75 88F8B 7> 9<E FA;5:</B<J@><:8?8:@B$8?8:$ > 75 J @<5 55 7@8B 9<E B:<GG8B 7@5<5;8C:8? 8=86<J J;7C; 65;<EA;G :569C;<I8B =9 7C7C68 @B @<J5; 5 B > 668@>:<F =<?8 J 5766 A G7@A 7@ F @9G6 B>8 :8 B9 5<:8C87?8 @8:: 57C =<B9$

:<S E@578B) 6I8:7@<:B8:5<A85:<G8 8@<EA; @B J :@7@A E 5<;<6B > 5 G: @A <?8:5;8C; F$ 8 67A;58B C68?8:69<@;7 >885 E@578B;7F 86 @B 8@5 EG5;8:<G8 5<) 6I8: J;<><66<J8B ;7 8L FG68$ 5 J 5;8@ F9 5E:@ @B B? @C8B 5<5;8 8BA8 <> 5;8 7C8$;8 8C<@B J;7C;<66<J8B J J; 5 7 C 668B EG:8F8 F<F8@5$; 5 7 5< 9 >865 EG:8F869:7B7CE6<E $;8 J<:6B 88F8B 5<:8?<6?8 5 >:7A;5>E6G C8 @B F9 5<F C;5<>69 J 9$;8@8L5 F<F8@5 ><E@B F9 86 G: J67@A7@5;8 @<J @B 5;8@ <> C<E: 8?<J8B 5; 5 75 J @<5;7@A @B G:8G :8B 5<8@C<E: A8F9 >:78@B U89@ EB$

8C F8 5<5;8 8BA8 @B F B8 B8C6 : 57<@ $ B< @<5 =8678?8 5; 5 ;8J @ J;75 F<:8 :86EC5 @5 5< G 5;8G6 C8 5; @ J8<5;8: =E5 ;8 J @>7@7586 9 F<:8 B8F<@ 5: 57?80K 7@ J<:B ;8 J 4:8@C;$ 8 J:E@A ;7; @B Z ; J; 5 $ <> G6 C8 3 Z 5 7 @<5;7@A 89@ EB03 7B Z75 7 @<5;7@A$3 Z .EFG03 C:78B 5;8<5;8: Z!:E@G$3 E5 ;8 5E:@8B :<E@B > : <@8 C @ B< EC; 5;7@A 7@ @ 7C8 58G @B C<?8:8B ;7 > C8 J75;7 ; @B 8! CE6 57@A Z /G<@ F9 J<:B 75 7 @<5 G< 7=68$ %< @< @< 75 7 @<5 G< 7=68$3

<J' ;8' C F8' <?8:' 'B<' @<5' I@<J$) 8' J' '5<8K75' 88F8B' 5<' =86<@A' 5<' <<:8'0 J8' J' 89@ EB' '>697@A' =<B9+' C<F7@A'B<J@' '7>'5 I7@A' ';8 B8:'7@5<' J" 58:0 J75;' :F ' @B' 68A ' 66' =:< B0 ;7 ' 68A' <>' FE55<@'>697@A'7@'5;8" 7:0 ;7 ' = 5<@'8 C G8B' >:<F' ;7 'A: G'0 @B' 5;8@' J8' ;8 :B' ' 5;EB' ' 7>' '=E@B68' <>' C :G85 ' ; B' =88@' G75C;8B'<E5' <>' 'J7@B<J$);8@' 85' EG<@' ;7 '>885' ;8' J ' ' <::9' G8C5 C680 ;7 ' ;8 B' JB ' 'A:8 5' @<J= 660 =: @B9' J ' 5:7CI67@A' <E5' <>' <@8' 7B8' <>' 5;8' I@ G CI0' C; :5:8E 8' <E5' <>' 5;8' <5;8:K J8' =8F<>5>78B' 75 '6< 0 =E5' J8' :< :8B' J75;'6 EA;58:$

;7 ' C; G58:' ; ' 6:8 B9' G 8B' 5;8' 67F75 ' J75;7@' J;7C;' 75' ;<E6B' ; ?8' =88@' C<@>7@8B0=E5' 'C @@<5' C6< 8'0?75' J75;<E5' G 97@A' 5:7=E58' 5<'5;8' =76759' J75;' J;7C;' :<S'68B' E 0 5;:<EA;' 'B8@ 8' F7 50 B<J@'5;8' :8F 7@B8:'<>'5;8' &6 C78:'B8' 76 558$ ' @'8L;7=757<@'<>' 5:8@A5;' @B' I766 0 75' ;'G:<= =69'@8?8:'=88@' E:G 8B'7@'5;8' 6G ' <:'86 8J;8:8$ @' 5;7 ' 6F< 5' E@I@<J@' @B'?8:9' 588G'A6 C78:0 ;8' J 'G8:>8C569' 5' ;<F8 0 8?8@' 7@'5;8' F7 5 $ %8?8:' =68' 5<' 88' >7>59' >885' ;8 B0 ;8$ 5766' J8@5'<@' J75;'5;8' E5F< 5' C8>5 7@590 @B' J75;<E5' ;?7@A'5<' :85: C8' ' 7@A68' 58G0 @B'B7 G6 98B' >:<F' >7: 5' 5<' 6 5' C<@ EFF 58' I@<J68BA8' <>'5;8' F 58:7 6 'J75;'J;7C;' ;8' J 'B8 67@A$ %<J' ;8' CE5' 58G 'B<J@' <@8' 7B8' <>' ' 'J8@5' J"75;' 'B ;' 5'5;8' <5;8:' 7B8 0 @B' ; E68B' E ' EG' >58:' ;7F 0 5;8@' CE5' J 9' 6<@A' ' :7BA8' E@576' 'G<7@5' J 'A 7@8B' >7R<F' J;7C;' J8' C=E6B' !E F G' <@' 5<' @<5;8:' :7BA8 0 5;8@0 B<E=67@A' = CI0 ><E@B' ' @<J =:7BA8 0 C:< ' J;7C;' ;8' C: J68B' <@' ; @B ' @B' I@88 0 5<J8B' E ' C:< '=9'5;8'68A 0 :7B7CE67@A'<E:' GG:8;8@ 7<@ 0 F7F7CI7@A'<E:' JIJ :B@8 0 B8C67@D 7@A' 66' ;86G0 =7BB7@A'E '<@69'5<'><66<J';7F$

=<;5'' ' $ $ J8' 8F8:A8B' >:<F' 5;8' F7 5' @B' ><E@B' <E: 86?8 ' !E 5' ::7?8B' EG<@'5;8' 68?86' G<:57<@'<>'5;8'A6 C78:0 ; ?7@A0 ' 89D @ EB' G:<G8:69' :8F :I8B0 C<F8' B<J@' 'HE7CI69' '7>'5;8:8' ; B'@<5' =88@' @9' F7 5' 5' /$;8@' J8' 55 CI8B' 5;8' 68A'<>' FE55<@' J;7C;' F9'>:78@B' ; B' <' 5;<EA;5>E669'=:<EA;5' J75;' ;7F0 @B' >58:J :B ' : C8B' B<J@0 J75;' :8@8J8B' 8@8:A90 5<' ' +: :B8$

89@ EB' @B' 'J 6I8B' 5<A85;8:'5<' 5$;:7 5<G;80 J;8:8' J8

G :58B$ 7@C8 5 ; 8@ J8 ; ?8 5 6I8B <?8:5 ; 8 B<7@A$ <> 5 ; 7 F < F 8@5D <E B 9 @B I@< J 5 ; 8 J<E6B @<50 ><: A<<B B8 60 ; ?8 F7 8B 5 ; 8 G A8 <> 5 ; 8 <6 B8 76 5580 65 ; <EA ; J8 > 768B 5< F I8 75 @ 8 78:5 <:5 ; <:58:5 :<E58 5 ; @ 5 ; 8 <6 BE 868$:8!<7@8B <<:8 @B) 6I8:0 5 ; 8 F8 8?8@7@A0 5 (8@< 0 @B <@ 5 ; 8 @8L5 B 9 J8@5 J75 ; 5 ; 8 F <?8:5 ; 8 E5 :85 :< B 5< 5 ; 8 ; < G7C8 <@ 75 EF F750 J ; 8:8 J8 68G5$

< <E:5 675568 C FG 7A@7@ ' EG ; 7@+ C F8 5< @8@B$ 5 J :8D F :I =68 ><:5 ; 8 = 8@C8 <> 76E:8 0 @B ><:5 ; 8 8 8 @B G:8C7 7<@ J75 ; J ; 7C ; <E:5 G6 @ J8:8 C ::78B <E5$; 7 J BE8 ?8:9 FEC ; 5< 5 ; 8 G7:75 <> F9 C<FG @7<@ 0 =E5 75 J 6 < <J7@A 5< 5 ; 8 >7@8 J8 5 ; 8:5 J ; 7C ; J8 J8:8 ><:5E@ 58 8@<EA ; 5< 8@!<90 @B 5< <E:5 F I7@A <?8:9 8 :69 5 :5 8?8:9 F<:@7@A$ 9 =8A7@@7@A <E:5 J<: I 5 <:5 =8><:8 5 ; 8 =:8 I <> B 90 <@ 5 ; 8 6<@A8 5 B 9 7@ 5 ; 8 98 :0 J8 J8:8 @<5 <@69 =68 5< ?<7B ; E::97@A J ; 8@ B867=8: 57<@ J B8D 7: =680 ; E5 C<E6B >><:B 5< G8@B 8?8: 6 ; <E: 7@ B867A ; 5>E6 8 8 J ; 8@8?8:5 ; 8 > @C9 87S8B E $

C @@<5 5<< 5:<@A69 :8C<FF8@B 5< 5<E:7 5 7@ 8 :C ; <> FE 8F8@5 5< ?<7B 5 ; 8 7@@ <> ' EG ; 7@8$ 688G 7@ 5 ; 8 C ; 685 $ &85 J ; 5 ><B 9<E C @ >:<F 5 ; 8 7@@ 0 =E5 =9 @< F8 @ 558FG5 5< G 7A ; 5 7@ 5 ; 8F$P 7@ 5 ; 8F 9<E C @@<5$ $.< @@8 9 5 ; 5 5 ; 8 7@?8@5<:5 <> 5 ; 8 7@ 8C57C7B8 G<JB8:5 J @ 57?8 <> ' E G ; 7@B$ C @ J866 =8678?8 75$ 8 FE 5 ; ?8 <>58@ >865 5 ; 8 @8C8 59 <> EC ; @ 7@?8@57<@ 7@ ; 7 7@> @C9 @B C ; 76B ; <<B$

@ .E@8 Q C:< 8B 5 ; 8 <6 BE & 67=78:5 5< 5$ 7C ; 86 <@ 5 ; 8 5 ; 0 5 ; 8 <6 B8 @C<F=:8 5< <E578: 0 <@ .E69 0 5 ; 8 <6 BE <@ ; <F F8 5< <@5 F7@8 0 @B <@ 5 ; 8 QB0 =9 5 ; 8 ?767<@ B8 8668?E8 5< ; F<E@7L0 J ; 8:8 ! <7@8B :$ B F 87669 5< 5 I8 G :5 7@ <F8 8LG8B757<@ J ; 7C ; ; B =88@ G6 @@8B 6<@A =8><:8$

P 'G<E@B <> 78=7AR 8L5: C5 @B >8J G<E@B <> C=<C<6 58 :8 66" 5 ; 5 @88B ; 8 5 I8@7@5 ; 8 J 9 <> ><<B0 5 ; 8 :8 5 C @ ; 8 <=5 7@8B <@ 5 ; 8 G<5$

8:' B8 &6 C8 <> ; F<E@7L' @BY75 ' 5:7=E5 :78 J ;7C=7@' <F8 <> 5 8 ><66<J7@A 98 : 678 8L58@B8 =9 >E:5;8:' <= 8:? 57<@ <' 5<' 7@C6EB8 5;8 &6 C78:' B8 ' < <@ $3 ;8 F G G:<BEC8B >:<F' 5;7 ' E:?89 J ' J<:5;9 <> 75 ' E5;<:0 @B E= 8HE8@5 8LG6<:8: ' <> 5;8 :8A7<@ ;8 7@?8 57A 58B ; ?8 =88@ =68 5<' B858C5 <@69 5:7?7 6 7@ CD CE: C78 ' 7@' ;7 ' J<:I$

;8 B7 5:7C5 E:?898B =9 4<:=8 ' :8F 7@8B ' <675 :9 =:7A;5 G<5 7@' ' :8A7<@ J ;8:8 66 =8 7B8 ' J ' B :I@8 ' E@576 5;8 98 :' $: 7 8J<:5;9 558FG5 ' J8:8 F B8 =9 B7>>8:8@5 ; @B ' 5<' 5;:<J' 67A;5 EG<:7 5;8 A6<<F0 =E5 5;8 8><:5 ' J8:8 7@8>>8C5E 60 @B ;<J8B ;<J' 6 =<E:' F 9 =8 5;:<J@' J 9 =9 ' @EF=8:' <> <= 8:?8: ' J<:I7@A' 7@B8G8@B8@569 0 J75;<E5 5;8 B7:8C57<@' <> ' 7@A68 ;8 B$

@' 0 ;885 LL77$ <> ' E><E:R ' G <> J75S8:6 @B GG8 :8B$ 5 7@C6EB8B 5;8 8C57<@' <> 5;8 C; 7@' <> <@5 6 @C 5; 5 =86<@A8B 5<' J75S8:6 @B0 @B 5;7 'G<:57<@' <> 5;8 ;885 J ' 8L8CE58B J75;'5;8 BF7: =68 >7B86759 @B 5;<:<EA;@8 ' J;7C;' C; : C58:7 8 5;8 J;<68 <> ' E><FR ' E@7HE8 F G$;8 :8F 7@B8:' <> 5;8 C; 7@' M F<E@5 ' 07@A' 5<' =<E5 ><E: >7>5; ' <> 5;8 J;<68N J ' 6 7B B<J@' >58:' 5;8 J<:I' <> G:8?7<E '5<G<A: G;8: 0 @B 75 ' J:85C;8B@8 ' J ' F B8 F<:8 GG :8@5 =9 C<@5: 5 J75;' 5;8 >7@7 ;8B J<:I' <> 5;8 J7 ' E:?89<: $ 5:<@A' ; @B ' J8:8 @88B8B 5<' C<FG6858 5;8 E:?890 @B 75 J ' @<5 6<@A' =8><:8 5;8 ;7A;5 F8@' GG8 :8B$

@' 0 :$ B F 87669 0 J;<' ; B =88@' 5: ?8667@A' 7@' 5;8 6G ' BE:7@A' 8?8: 6 98 : 0 :8 <6?8B 5<' 558FG5 ' E:?89 <> 5;8 E@D E:?898B G<:57<@ ' <> 5;8 C; 7@' <> <@5 6 @C$ 8 G:<?7B8B ;7FD 86> J75;' ' A<<B 5;8<B<;580 @B 5 :57@A' >:<F' ' = 8 67@8 F8 E:8B' =9 4<:=8 ' 7@' 5;8 (6689 <> ; F<E@7L0 B858:F7@8B 5;8 G< 757<@ ' <> @<68 ' 5; @' Q ' G<7@5 $;8 CCE: C9 <> ;7 ' J<:I' F 9 =8 !EBA8B >:<F' 5;8 > C5 5; 50 >58:' ; ?7@A' 5E:@8B F @9 C<:@8: ' @B C ::78B ;7 ' <= 8:? 57<@ ' <?8:' ' B7 5 @C8 <> >7>59 F768 0 ;7 ' <6 48::85 Z>866 J75;7@' Q ' 9 :B ' <> 5;8 G< 757<@' 7A@8B 5<' 75 =9 &8@8: 6 ' E><E: 3 @' 5;8 J7@58:' <> ' @B 5;8 G:7@A' <> 20 :$ 87/9 C<@D 5:EC58B @' 8@_7:869 <:7A7@ 6 F G >:<F' ;7 ' @8J69 CHE7:8B 8 5 $;8 G C8 ' =85J88@' ;7 ' 5:7A<@<F85:7C 669 B858:F7@8B G<7@5 ' ;8

>7668B$ 7@ >58:$ G67<5<A: G67 0 @B$ $ 8:78 $<>$ G @<: F7C$ I85C;8 $ J;7C;$;8$ F B8$ >:<F$;7 $ B7>>8:8@5$ 5 57<@ $;8$ F G$ <$ G:<BEC8B$ J $ @$ 7F F8@ 8$ B? @C8$ EG<@$ 5;< 8$ 6:8 B9$ 7@$ 8L7 58@C80 @B$ 75$ J $ 5;8$ >7: 5$ J;7C;$ 8L;7=758B$ 5;8$ A:8 5$ G8 I $7@$ 5;87:$ G:<G8:$ G< 757<@ $;7 $ 8L5: <:B7@ :9$ G78C8$ <>$ J<: I$:8?8 68B$:$ 8:769$ 5<$ F8$ $ $ F @$ <>$ J<@B8:>E6$ B858:F7@ 57<@$ @B$ G8: 8?8: @C8$) 75;$?8:9$ F 66$;<G8$ 5; 5$ F9$ G:<G< 6$ J<E6B$;8$ CC8G58B0 $7@?758B$ F$ 5<$ 5 I8$ G :5$ 7@$:8@8J8B$ 55 CI $ <@$ 5;8$ 558:;<:@$ 8$ 8@58:8B$;8 :5769$ 7@5<$ F9$ G6 @ 0 @B$ F85$ F8$ J75;$ $ C<E@58: G:<G< 757<@0 @ F8690 5; 5$ $;<E6B$ CC<FG @9$;7F$ <@$ <F8$ 8LG8B757<@ $ J;7C;$;8$; B$ G:<!8C58B$ 7@$ 5;8$ C; 7@$ <>$ <@5$ 6 @C$;8$ E@J:7558@$ C<@D 5: C5$ 5<<I$ 5;7 $><:F$ 0K $ J7 $;86G$ 9<E$ 5<$ C ::9$ <E5$ 9<E:$ B8 7:8 0 @B$ 9<E$; 66$ 7 5$ F8$ 5<$ C ::9$ <E5$ F7@8$ $ 8 A8:69$ C6< 8B$ J75;$ @$ :: @A8F8@5$ 7@$ J;7C;$ 66$ 5;8$ B? @5 A8 $ J8:8$ EG<@$ F9$ 7B8$ 5$ 5;8$ 57F8$ 5; 5$:$ 87/9$ J $C ::97@A$ <@$;7 $ E:?89$ G5 7@ 78E685$ J $ 8L8CE57@A$ @<5;8:$ 7@$ C<@57@E 57<@$ <>$ 5;8$ A:8 5$ F G$ <>$ 4: @C8$ 0 ><:$ =<E5$ <@8 ; 6>$ <>$ 5;8$ C; 7@$ <>$ <@5$ 6 @C$ M7@C6EB7@A$ 5;8$ J;<68$ <>$ 5;8$ (6689$ <>$; F<E@7LN$; B$:8C8@569$ =8C<F8$ 4:8@C;$ <@C8$ F<:8$ G5 7@$ 78E685$ J $ B7:8C58B$ 5<$ E:?89$ EG$ 5<$;7 $ >:<@578:$ <@690 @B$ 5;8$;885$ J ;7C;$ J $ B8 57@8B$ 5<$ 7@C6EB8$ $ J<:I$ J $5<$;8$ 8@A7R ?8B0 <>$ C<E: 80 EG<@$ 5;8$ C 68$ <>$ 5;8$:8 5$ <>$ 5;8$ F G0 ?7S$0]A J7:$ <>$ @ 5E:8$ E5$ EG<@$:8G:8 8@5 57<@ $ =87@A$ F B8$ 5$;8 B HE :58: $5; 5$ 75$ J<E6B$ =8$ <>$ A:8 5$ B? @5 A8$ 5<$ 8LD 58@B$ 5;8$ E:?89$ $> :$ $ <:F 98E:0 G5 7@$ 78E685$ J $ B7:8C58B$ 5<$ C<@57@E8$;7 $ <= 8:? 57<@ $ 7@5<$ 5;8$ <E5;$ M<:$ 5 67 @N$ 7B8$ <>$ 5;8$ C; 7@$ $ G8C7 6$;885$ <@$ 5;8$ C 68$ <>$ 7 $<FN$ J $ G:<F!7569$ 8@D A: ?8B$ >:<F$ 5;8$ F 58:7 6$;8$ CCEFE6 58B0 @B$ J $ GE=67 ;8B$ 7@$ 0 =9$ <:B8:$ <>$ 5;8$ 6 58$ 7@7 58:$ <>$) :0 : ; 6$ @B<@$+$;7 $;885$ J $ BF7: =69$ 8L8CE58B0 =E5$ 75$ 7@C6EB8B$ 5;8$ C8@5: 6$ G<:57<@$ <>$ 5;8$ C; 7@$ <@690 @B$ $C<FG6858$ F G$ J $ 5766$ J @57@A$:$ 8:769$ G:8 8@58B$ $ $ F G$ 5<$ 5;8$ @A67 ;$ 6G7@8$ 6E=$ 5$ J $:8 <6?8B$ 5; 5$ 75$;<E6B$ =8$ GE=67 ;8B0 =E5$ =8><:8$ 75$ G 8B

P$ /@B8:$ 5;8$ 57568$ <>$ &$ 2' $ '" $ 6 $ $ 2 $ $ $ $ $ $ $) $ 0 $ $ 2 $ $ 7 $ G

6# 7 , * & ' 7 * "(' 9' (' % (7 Q

7@5<' 5678' 8@A: ?8:R' ; @B ' 75 ' E5 ; <:' E@B8:5<< I' 5<' :8?7 8' 75' C :8>E669$ <' 5 ; 7 ' 8@B' ; 8' G6 @@8B' ' @EF=8:' <>' 8LG8B757<@ ' 5<' ; 7A ; ' G<7@5 ' J ; 7C ; ' EG' 5<' 5 ; 5' 57F8' ; B' =88@' :8A :B8B' 7@ CC8 7=68I' @B' 75' J ' EG<@' <F8' <>' 5 ; 8 8' C8@5 ' ; 8' 7@?758B' F8' 5<' CC<FG @9' ; 7F$P

8><:8' ' G ' <@' 5<' 5 ; 8 8' 8LG8B757<@ ' MJ ; 7C ; ' J 766' =8' B8 C:7=8B' ?8:9' =:78>69I' ' ' ; <G8' 5 ; 5' :$ 87 / 9' ; 7F 86>' J 766' GE=67 ; ' @' CC<E@5' <>' 677 ' :8F :I =68' 8LG6<: 57<@ NI' 75' J 766' =8' C<@?8@78@5' 5<' B8?<58' ' >8J' G : A: G ; ' 5<' 5 ; 8' 5<G<A: G ; 9' <>' 5 ; 8' C ; 7@' <>' <@5' 6 @C$7"

5' 5 ; 8' G:8 8@5' 57F8' 5 ; 8' C ; 7@' 7 ' B7?7B8B' =85J7L5' 4: @C8I' J75S8:6 @BI' @B' 5 69$ 4: @C8' ; ' 5 ; 8' 67<@R ' ; :8I' J75S8:6 @B' 5 ; 8' F< 5'>8:5768'G<:57<@I' @B' 5 69'5 ; 8' 588G8 5' 7B8$ 5' ; ' CHE7:8B' ' :8GE5 57<@' J ; 7C ; ' 7 ' @<5' 8L5: <:B7@ :9I' =E5' J ; 7C ; ' 7 ' @<5' J ; <669' F8:758B$ 5' ; ' @875 ; 8:' 5 ; 8' =8 E59' <>' 5 ; 8' =8:6 @BI' @<:' 5 ; 8' E=67F759' <>' ' EG ; 7@ ; ' E5' 75' 55: C5 ' 5 ; 8' ?E6A :' =9' 5 ; 8' G< 8 7<@' <>' 5 ; 8' ; 7A ; 8 5' EFF75' 7@' 5 ; 8' 6G $ >' 5 ; 5' 7 ' :8F<?8BI' 5 ; 8' 868? 57<@' <>' $ ' C ; 7@' 7 ' 7@' @<J7 8' :8F :I =68$ @' > C5I' 8LC6EB7@A' <@5' 6 @C' 75 86>I' 5 ; 8' F<E@5 7@ ' <>' J ; 7C ; ' 5 ; 8' C ; 7@' 7 ' F B8' EG' :8' ' 7FG<:5 @5' 5 ; @' 5 ; < 8' <>' 5 ; 8' =8:6 @B' @B' 5 ; 8' C8@5: 6' 8@@7@8' A:<EG $; 8' ><66<J7@A' 5 =68' J766' >><:B' ' :8 B9' F8 @ ' <>' C<FG :7 <@$X[

P' :$ 87669R ' F G' J ' GE=67 678B' <E' ' C 68' <>' 7@' I' 5' 5 ; 8' C< 5' <>' 5 ; 8' 6G7@8' 6E=I' E@B8:' 5 ; 8' 57568' $ ' $ ' &' '"

5' 88' 5 ; 8' F G' <>' 5 ; 8' C ; 7@' <>' <@5' 6 @C' 5' 5 ; 8' 8@B' <>' 5 ; 8' ?<6EF8$

; 7 ' F G' ; ' =88@' B: J@' >58:' 5 ; 8' E:?89 ' <>' 78E685I' 'E><@:I' @B' 87669$ < 7 5' 7@' 75 ' G:<BEC57<@I' 5 ; 8' '8G 5' B8' 6 ' &E8::8' 5' :7 ' F< 5' 67=8: 669' >E:@7 ; 8B' F8' J75 ; ' G8C7 6' C<G78 ' <>' G5 7@' 78E685R ' F G$; 8' J8:8' :8BEC8BI' =9' G ; <5<A: G ; 9I' 5<' 5 ; 8' C 68' <>' J ; 7C ; ' 7 ' 5 ; 8' F8' ' 5 ; 5' 5' <>' E><E:R ' F G$; 8' J7 ' G<:57<@' <>' 5 ; 8' C ; 7@' J ' 5 ; 8@' >7558B' <@' 5<' 5 ; 8' :8BEC57<@$; <5<A: G ; 7C' :8BEC57<@ ' <>' 5 ; 8' = 7@' <>' 5 ; 8' &6 C78:' BE' <E:' @B' <>' 5 ; 8' J ; <68' <>' 5 ; 5' G<:57<@' <>' 5 ; 8' C ; 7@' J ; 7C ; ' 678 ' 5<' 5 ; 8' J8 5' <>' 5 ; 8' <E5 ; 8:@' &6 C78:' B8' 7 A8' @B' 5<' 5 ; 8' <E5 ; ' <>' 5 ; 8' &6 C78:' B8' :86 5858' J8:8' 5 ; 8@' BB8B' >:<F' :$ 87669R ' F G$; 8' @<F8@C6 5E:8' <>' 5 ; 8 8' E5 ; <:7578 ' ; ' =88@' 5:7C569' ><66<J8B$ 5' F 9' =8' :8F :I8BI' ; <J8?8:I 5 ; 5' G5 7@' 78E685' ; ' B8G :58BI' 7@' F @9' 7@ 5 @C8 I' >:<F' 5 ; 8' G8667@A' 7@' C<F F<@' E 8$

_' ; 8' ; 87A ; 5 ' M7@' F :8 N' :8' >58:' G5 7@' 78E685$

	5#59 "6?'.554 1
&' 764' 0%36;	(& ' @ & , &
' #36:59' 7#39959	(' & ,
' ?A %%5' $5#45	(& ' & , (
(:5' 0 76639932	(&' & , (
' 59' #7 459	(' & ,
' ?A %%5' :A' 364'	(& ' & ,&
' B :5' #5%34C45,' 7 ' & D	' ' & ,'
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E' B' 'F	' ' & ,
:> #?2564 5#5	' &' & , ' '
' :5' # 7%54	' ' & ,
& :A' : '	(' & ,
&& :A' %3; 5#	(' & , '
& ' 764' 7%564	' & ,
& ' ?A %%5' :A' * <3#:76654	' & , (
&(:A' #A' '	' & ' & , &
& :5' 3?5'	' & , (
& :A' %36	' & , &
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;8' >:<@578: 67@8' ><66<J ' 5;8' F 7@' :7BA8$ (8:9' 675568' <>' 75' C @' =8' 88@' >:<F' 5;8' (6689' <>' ; F<E@7L' @B' >:<F' 5;8' ?766 A8' 75 86>' 5J<' F 66' 5:7G ' <@69' :8' ?7 7=68' M F<E@57@A' 5<' C :C869' 5;:88' F768 ' 7@' 68@A5;N' ?7S$ >:<F' 5;8' E F F75' <>' <@5' 6 @C' 5<' 5;8' ' B F 8' BE' &<;58:' @B' 7@' 5;8' @87A;=<E:;<<B' <>' 5;8' <6' B8' 6F8$ 66' 5;8' :8 5' 7 ' C<@C8 68B' =9' <E5697@A' :7BA8 ' @B' =9' F<E@5 7@ ' <>' 8C<@B :9' 7FG<:5 @C8$

<@5' 6 @C' 75 86>' 7 ' =<E@B8B' =9' 5;8' 5J<' A6 C78: ' <>' 7 A8' 5;8' A6 C78: ' B8' 6 ' :8@? ' @B' BE' &8 @50' 5;8' (6' (8@7' @B' 5;8' (6689' <>' ; F<E@7L$ ' 6<@A' :7BA8' :E@ ' <E5' 5<J :B ' 5;8' :$%$ $ >:<F' 5;8' E F F750' 5;:<EA;' <@5' EB750' 5<' 5;8' 7AE7668' BE' 7B7$ @<5;8:' :7BA8' G:<C88B ' 5<J :B ' 5;8' %$) $0' 5;:<EA;' 5;8' < 8' BE' ' :<F B 7:8' 5<' 5;8' ' <F 8' BE' &<E58:' 0' 5;7 ' 5;8@' B7?7B8 ' 7@5<' 5J<0' <>' J;7C;' <@8' C<@57@E8 ' %$) $ 5<' 5;8' 7AE7 / 8' BE' &'<E58:0' 5;8' <5;8:

P' <F8' <>'5;8 8' ;87A;5 ' ; ?8' @<' =E 7@8 ' 5<' >7AE:8' 7@' '67 5' <>'5;8' G:7@C7G 6' G8 I ' <>' 5;8' C; 7@0' =87@A' @<5;7@A' F<:8' 5; @' 5885;' <:' G7@@ C68 ' 7@' :7BA8 0' <:' G<:57<@ ' <>' ;7A;8:' F<E@5 7@ $ EC;0' ><:' 8L FG680' :8' 5;8' 7AE7668 ' BE' &8 @50' BE' ' :E0' @B' B8' 7<@@ 9$

MJ C;$ 7 ' ' G :5 <>$ 5;8 F 7@ :7BA8 <>$ 5;8 C; 7@N 5<J :B '5;8) $ 5< 5;8 7AE7668 B8 7<@@ 9$;8 5J< :<E58 ' J;7C;' :8 C<F F<@69 ><66<J 8B ><:' 5;8 C8@5 <>$ <@5 6 @C 678 =85J88@ 5;8 8 5J< G:7@C7G 6 :7BA8 K <@8 68 B7@A :><F ; F<E@7L '5;8 &: @B ' E685 0 5;8 <5;8:$ >:<F' 5;8 ? 6 A8 <>$ 7<@@ 90 '5;8 7A@7668 @B ' <F8 BE &<E58:$P

;8 C8@5 <>$ <@5 6 @C ; '=88@ F B8 >:<F' 8?8: 6 B7:8CD 57<@ '=8 7B8 '5;8 80 @B G8:; G '5;8:8 7 ' @< 7EA68 G<7@5 <>$ 5;8 C<FG ' >:<F' J;7C;' 5;8 F<E@5 7@ C @@<5 =8 C8@B8B$ E5 5;8:8 7 '@<5 5;8 68 5 G:<= =7675 9 5; 5 @9 <@8 J766 B7 C<?8:' 8 78:' J 9 '5< 5;8 EF F75 5; @' 5;< 8 6:8 B9 I@<J@$

'=8678?8 75 7 ' C<::8C5 5< 9 5; 5 5;8 7AE7668 BE 7B @B 5;8 7AE7668 B8 7 A8 J8:8 5;8 <@69 5J< EF F75 ' 7@ 5;8 C; 7@ <> <@5 6 @C J;7C;' ; B =88@ C8@B8B 5 5;8 =8A7@@7@A <>$ 2$5 ;8 6 558:' <>$ 5;8 8 5J< 7 ' 'G8:>8C569 7@ 7A@7>7C @5 G<7@50 @B 5;8 ><:F8:' 7 ' <@69 ' G<:57<@ <>$ <@8 <>$ 5;8 :7BA8 ' !E 5 @<J' F8@57<@8B0 @B C @ ; :B69 =8 :8A :B8B ' ' F<E@5 7@ 8G : 58 @B 7 57@C5 >:<F <@5 6 @C$;8 :8 669 A7 8 5 G8 I ' <>$ 5;8 C; 7@ J8:8 C<@ 7B8:8B 7@ CC8 7=680 @B0 ' 5;7@ I0 J75;' 5;8 8LC8G57<@ <>$ 5;8 7AE7668 (8:580 ; B @8?8:' =88@ 768B$

;8 >7@8 50 ' J866 ' 5;8 ;7A;8 5 G8 I' 7@ 5;8 C; 7@ M >58:' <@5 6 @C 75 86>N0 7 ' 5;8 &: @B8 ' .<:@ 8 $;8 @8L50 J75;<E5 ' B<E=50 7 ' 5;8 7AE7668 (8:58$;8 7AE 68 B8 7<@@ 90 J;7C;' 7@ C5E 6 ;87A;5 ><66<J '5;8 (8:580 ;<E6B =8 C<@ 7B8:8B ' 'G :5 <>$ <@5 6 @C 0 + @B 7@ 5;8 F8 J 9 5;8 EF F75 C 668B 8 ' ':<758 ' 7 ' <@69 ' G :5 <>$ 5;8 :7BA8 J;7C;' CE6F7@ 58 ' 7@ 5;8 (8:58$;8 7AE7/8 B8 :+6 5+58 7 ' 5;8 @8L5 <@ 5;8 67 5 5; 5 7 ' 8@57568B 5< =8 C<@ 7B8:8B ' 8G : 58 F<E@5 7@0 @B 7 ' =9 > :' 5;8 F< 5 7FG<:5 @5 G8 I' M ' J866 ' 5;8 ;7A;8 5N 5 5;8 <E5; J8 5 8@B <>$ 5;8 C; 7@$;8@ C<F8 ' 5;8 7AE7668 BR :A8@57FR0 J;7C;' <CCEG78 ' 5;8 F8 : @I' 5 5;8 @<:5; 8 5 8@B ' 5;8 6 5 F8@57<@8B F<E@5 7@ B<8 ' 7@ 5;8 <E5; J8 5$;8:8 5 <>$ 5;8 7AE7668 ' :8 C<FG : 57?869 7@ 7A@7>7C @50 @B 65;<EA;' <F8 <>$ 5;8F' M EC;' ' 5;8 <@5

P ;8 8 :<E58 ' :8 6 7B B<J@ <@ 5;8 G$ _' 8 7B8 ' <@5 6 @C 75 86>$

' <68@5N6<< I' J866 >:<F' 6< J' 868? 57<@ 0 @B 88F' 5<' G< 8 ' ' C8:5 7@ 7FG<:5 @C80 5;89 7@I' 7@5<' 5;87:' G:<G8:' G6 C8 ' B7:8C569' <@8 ::7?8 ' 5 ' C<@ 7B8: =68 6575EB8$

;8 EF F75' <>' 5;8 7AE7668 (8:58' J<E6B ; ?8 =88@' <@8 <>' 5;8 =8 5 5 57<@ ' <E5 <>' 66 5;8 8 F<E@5 7@ ' ><:' 5;8 GE:G< 8 ' <>' F9 >:78@B$ 5 ' A:8 5 ;87A;50 @B' 75 ' 7 <6 58B @B' C<F F @B7@A' G< 757<@0 F I8 75 ' F< 5 BF7: =68 G<7@5 ><:' ?78J7@A' 5;8 7@5:7C C78 ' <>' 5;8 C; 7@0 =E5 ;8 8L8:C7 8B ' J7 8 B7 C:857<@' 7@' G 7@A' 75 =90 @B' 7@ 868C57@A' ' <E:' >7: 5 8LCE: 7<@' 5;8 G A8 <>' 5;8 <6 B8 :7<685$P

) 8 68G5 E@B8:' <F8 =7A' :<CI ' <@' 5;8 <E?8:C68 <@ 5;8 @7A;5 <>' .E69 10 J75;' 5;8 5;8:F<F858:' 5 Q " ' ;5 @B 5 2" ' <@' 5;8 5;' F B8 ' 5: 7A;5 5: CI' 5<' 5;8 @<:5;' <>' 5;8 . :B7@0 @B' 5;8@C8 J8@5' 7@' S7AS A 0 5<' =:8 I' 5;8 C8@50 <?8:' 5;8 EGG8:' 6<G8 ' <>' 5;8 &6 C78:' B8 6+>:8 5<J :B ' 5;8 ><<5 <>' 5;8 7AE7668 B8 :7<685$:<S J ' 5766 F9 AE7B80 U87669 J ' CC<FG @78B =9 <@8 <>' 5;8 7C;86 9<5 ' <>' ; F<E@7L0 @B 8@:7 ; :6850 <>' 5;8 F8 G6 C80 J ' <E:' G<:58:$

;8 J 9 J ' <?8:' @' E@BE6 57@A' G6 7@' <>' A6 C78:' <>' F<B8: 58 7@C67@ 57<@' E@576 5;8 C<:@8:' 68 B7@A' 5<' 5;8 <60 >:<F' J;8@C8 ' 588G 8C<@B :9 A6 C78:' 68B B<J@' 7@5<' 5;8 = 7@' <>' 5;8 68>:8$) 8 8LG8:78@C8B @< B7>>7CE659 7@' F I7@A' 5;8 C8@5' <>' 5;7 ' 8C<@B :9 A6 C78:' J75;' EC;' 7C8 F8@ ' :<S @B 9<50 @B' 5 1$ ' $ $ ::7?8B' <@' 5;8 5<G <>' 5;8 < C 668B G 0 5 ' ;87A;50 CC<:B7@A' 5< 78E6850 <>' Q0 Q >880 @B' 2 ' =<?8 <E:' C FG' <@' 5;8 <E?8:C68$

;8 B8 C8@5' J ' C<F F8@C8B =9 ?8:9 588G0 =E5 >7:F0 :<CI 0 @B 5;8@ =9 ' =: @C;' <>' 5;8 &6 C78:' B8 :7<685$ C;:E@B 5 J8:8 =E@D B @5' 0 5;8:8 J8:8 @< 68 ' 5; @' >7?8 8L58@B7@A' C<F G6858 69 C:< ' 5;8 A6 C78:0 66 <>' J;7C;' ; B 5<' =8 !EF G8B$ <5 <@8 J ' 8HE 6 7@ B7F8@ 7<@ ' 5<' 5;8 8L5: <:B7@ :9 C; F' <@' 5;8 <6 B8 76 5580 =E5

@' :8?7<E ' 5<' 5;7 ' J8 F B8 @ 558FG5 5< C8@B' 5;8 7AE7668 BR :A8@578:80 @B' J8:8 B8>8 58B =9 ' ?7<68@5 J7@B' J;8@ J75;7@' ' ;E@B:8B >885 <>' 5;8 EF F75$ 5 7 ' F<:8 C<@?8@78@5 5< :8>8:' 5< 5;7 ' 8LG8B757<@ 5 5;8 8@B' <>' 5;8 C; G58:$

5' &:8 5 C:8? 8 $ ' =8:A C;@FB 7 ' ' C;:E@B0 =E5 <F85;7@A' F<:8$ M 88 ; G0 L7?$N

7@ 5;8 AA:8A 58 5;89 > :' E7 G 8B 75$ Z E:' 67?8 03 < 87669' 8LD G:8 8B 750 Z J8:8 F B8 ' =E:B8@ 5< E ' J75;' C;:E@B $3

8?8: 6 GE: ' :E@ <E5 5<J :B ' 5;8 <E5; 8 5 >:<F' 5;8 :7BA8 5 5;8 ;8 B <> 5;8 &6 C78:' B8 :7<685 @B B7?7B8 75 7@5< ' @E F=8:' <> = 9 $) 8 B8 C8@B8B 5;8 F< 5 @<:5;8:@ <> 5;8 8 @B J;8@ J8 8F8:A8B >:<F' 75 <@ 5< 5;8 <G8@ A6 C78: !E 5 5 5;8 !E@C57<@ <> <E:' = 9 J75;' 5;8 @8L5 <@8 5;8:8 J8 C F8 C:< ' ' F< 5 =8 E57>E6 7C8 ' :C; >8 5<<@8B J75;' 7C7C68 5;8 B8C 97@A :8F@ @5 <> @ <6B B: C J;7C;' 5<<B 7 <6 58B >E66 ' >885 =<?8 5;8 E:> C8 <> 5;8 A6 C78:' 5 J ' @ CC7B8@5 @B ' ; ?8 @<5 88@ 75 ' ; I8 86 8J;8:8$) ;8@ ' G 8B 5;8 G<5 7@ ' @< ?8 57A8 <> 75 :8F 7@8B$

) 8 >6 558:8B <E: 86?8 ' 5; 5 J8 ;<E6B ::7?8 5 5;8 C; 685 ' <> :8 BE :' ?8:9 8 :69 7@ 5;8 B 9 =E5 <J7@A 5< FEC;' 57F8 =87@A 6< 5 <@ 5;8 6<G8 ' <> <@5 <EA8 75 J ' @8 :69 2 1 2 =8><:8 J8 A<5 5< 5;8F$;8:8 J8:8 @< =:7BA8 ' C:< ' 5;8 5<::8@5 @8 :8:' 5; @ &:E855 @B : 5;8:' 5; @ B8 C8@B < > :J8 G:8>8::8B 5< :<E@B 5;8 = 8 <> <@5 <EA8 @B 5< C:< ' 5;8 @<E5 <> 5;8 &6 C78:' BE <@5 ' <68@5$P) 8 <CCEG78B 5;8 5;' J75;' 5;8 C8@5 <> 5;8 <@5 ' <68@5$;7 ' J ' ' @77@7 5E:8 C8@5$ 5 C<@5 7@8B ' 675568 <> 8?8:95;7@A$ 47: 5 J8 J8@5 EG 5< 5;8 <6 48::85 M <$ N @B ; B ' 675568 A:7@B <?8:' ; 69 = @I ' 5;8@ 5;8:8 J ' ' ;5568 J 6I ' <?8:' A: ' 5;8@ ' ;5568 5: FG <?8:' ' F<: 7@8 MJ;7C;5: @A8 5< 9 A ?8 ' G68 D @5 G 5;N 5;8@ ' ;5568 S7AS AA7@A <?8:' 5;8 @<J C<?8:8B A6 C78:' <> <@5 ' <68@5$;8@ 5;8:8 J ' ' ;5568 =8:A C;:E@B 5;8@ ' 675568 J /' <> @<J0K J;7C;' J8 F<E@58B =9 5;8 7B8 <> ' ;5568 =E55:8 ' @B J;8@ J8 5:EC I ' 5;8 :7BA8 B8 C8@B7@A $ $ >:<F' 5;8 EF F750 J8 ><E@B ' ;5568 :858 <> @<J' 68 B7@A 5< 5;8 ;7A;8 5 G<7@5$;8 EF F75 75 86> J ' ;55680K +?8:9 F 66 7@B88B 0 75 J ' 5;8 6<?8;8 5 ;5568 C<@8 <> @<J' 5; 5 J ' 8?8:' G768B EG <@ F<E@5 7@ 5<G 0 <

P ;8 G A8 <>' 5;8 <6 B8 :7<685 >:<F' 5;8 <E?8:C68 5< :8 BE :' <CCEG78B '.' ;<E: ' <> C5E 6 J 6I 7@A8 >' 75 ; B =88@ 5 I8@ 7@ 5;8 C<@5: :9 B7:8C57<@ 75 J<E6B ; ?8 C<@ EF8B ' FEC;' 6<@A8:' 57F 8$ 5 A ?8 ' :<E58 ;<:58:' 5; @ @9 I@<J@ 5 5;8 57F 8 =85J88@ ; F<E@7L @B 5;8 5$ 8:@ :B$ ' ' G ' ' C @@<5 C<@ C78@57<E 69 :8C<F F8@B 75 5< @9 <@8 M 88 ; G L7L$N @<:' F ' B8 7:<E ' 5< A< A 7@ <?8:' 5;8 F<: 7@8 <@ 5;8 68>5 ; @I ' <> 5;8 &6 C78:' B8 :7<685 <:' 5;8 :<CI ' <> <@5 <EA8$

<>5 ' GE:8 75 88F8B ' C:7F8 5< B8>768 75 75 J ' ' F7@7 5E:8 .E@A>: E ' 5<9 EF F75 9<E C<E6B C<?8:75 J75;5;8; @B$P

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) 8 J8@5 B<J@5< <:F 98E: @B <@5;8 >58:@<<@ <> .E69 5 :58B >:<F 5; 5 G6 C8 5< C FG <@ <@5 E8 ><:5;8 C8@5 <> 5;8 7AE7668 B8 :86 5=58 ;<G8>E6 5; 5 5;8 F7 5 J;7C;J8:8 ; @A7@A =<E5 J<E6B C68 : J 9$;89 B7B @<5 < J8 B8G< 758B <E: 86?8 @B ? 5 6< B <> 5: J <@5;8 F<: 7@8 <> 5;8 7 A8 &6 C78: !E 5 =<?8 5;8 C B8 <F= 6 7@ C; :F7@A 675568 ;<68 J;7C; <F8 <675 :9 ;8G;8:B ; B 8LC ? 58B =8@8 5; A:8 5 6 = <> :<CI$) 8 G8@5 5;8 @7A;5 5;8:8 @B 5;8 J;<68 <> 5;8 @8L5 B 9 E@J7667@A

P 678 C8@5 <> <@5 '<68@5 @B :85E:@5< :8 BE :M7@C6E 7?8 <> ; 65 N <CCED G78B 68 5; @ ;<E: $

_ ;8 =: CI858B G : A: G; 7@5;7 C; G58: :8 8L5: C58B >:<F 5;8 @<58 <> :$ U87669$

to run away, and equally so to get into difficulties by venturing into the mist. It was a dull time, and I grew restless. Reilly read to me a lecture on the excellence of patience, and composed himself in an easy attitude, to pore over the pages of a yellow-covered book. "Patience," I said to him viciously, "comes very easily to fellows who have shilling novels; but I have not got one; I have picked all the mud out of the nails of my boots, and have skinned my face; what shall I do?" "Go and study the moraine of the Miage," said he. I went, and came back after an hour. "What news?" cried Reilly, raising himself on his elbow. "Very little; it's a big moraine, bigger than I thought, with ridge outside ridge, like a fortified camp; and there are walls upon it which have been built and loop-holed, as if for defence. "Try again," he said, as he threw himself on his back. But I went to Croz, who was asleep, and tickled his nose with a straw until he awoke; and then, as that amusement was played out, watched Reilly, who was getting numbed, and shifted uneasily from side to side, and threw himself on his stomach, and rested his head on his elbows, and lighted his pipe and puffed at it savagely. When I looked again, how was Reilly? An indistinguishable heap; arms, legs, head, stones, and straw, all mixed together, his hat flung on one side, his novel tossed far away! Then I went to him, and read him a lecture on the excellence of patience.

Bah! it was a dull time. Our mountain, like a beautiful coquette, sometimes unveiled herself for a moment, and looked charming above, although

very mysterious below. It was not until eventide she allowed us to approach her; then, as darkness came on, the curtains were withdrawn, the light drapery was lifted, and we stole up on tiptoe through the grand portal framed by Mont Suc. But night advanced rapidly, and we found ourselves left out in the cold, without a hole to creep into or shelter from overhanging rock. We might have fared badly, except for our good plaids. But when they were

OUR CAMP ON MONT SUC.*

sewn together down their long edges, and one end tossed over our rope (which was passed round some rocks), and the other secured by stones, there was sufficient protection; and we slept on this exposed ridge, 9700 feet above the level of the sea, more soundly, perhaps, than if we had been lying on feather beds.

We left our bivouac at 4.45 A.M., and at 9.40 arrived upon the

* From a sketch by Mr. Adams-Reilly. This camp was immediately at the foot of the snow seen upon the map to the N.W. of the words Mont Suc.

;7A;8 5' <>' 5;8' 5;:88' EF F75 ' <>' 5;8' :86 58580 =9' G 7@A' <?8:' 5;8' 6<J8 5' <@8$ 5' J ' J8/' =<?8' 8?8:95;7@A' 5' 5;7 ' 8@B' <>' 5;8' C; 7@0' @B' 5;8' ?78J'>:<F' 75' J ' 8L5: <:B7@ :769' F A@7>7C8@5$;8' J ;<68' <>' 5;8' J8 58:@' > C8' <>' <@5' 6 @C' J ' G:8 B' <E5' =8><:8' E ' 0 J8' J8:8' 5;8' >7: 5' =9' J ;<F' 75' ; B' =88@' 8?8:' 88@$ ' C8B8' 5;8' B8 C:7G57<@' <>' 5;7 ' ?78J' 5<' F 9' C<F: B80' 5<' J ;<F' 75' :7A;5>E669' =86<@A $

k4<:' ><E:' 98 : ' ' ; B' >865' A:8 5' 7@58:8 5' 7@' 5;8' A8<A: G;9' <>' 5;8' C; 7@0 5;8' 98 :' =8><:8' ' ; B' F GG8B0' F<:8' <:' 68 ' ECC8 >E669 0' 66' =E5' 5677 ' G<50' @B' 5;7 ' G<5' ; B' 6J 9 ' 86EB8B' F 9' A: G$;8' G: 7 8 0' E@B8 8:?8B' ' 56789' J8:80' J ;7C;' F 9' F G' ; B' :8C87?8B0' J8:8' ' A 66' @B' J<:F J<<B' 5<' F 8' J ;8@' ' 5;<EA;5' <>' 5; 5' A:8 5' 6<G8' J ;7C;' ' ; B' =88@' <=67A8B' 5<' 68 ?8' ' =6 @50' G8C I68B' <?8:' J75;' E@F 8 @7@A' B<5 ' <>' :<C I0' A 67;8:8B' >:<F' G:8?7<E ' F G K><:' ' ; B' C<@ E658B' 5;8F' 66' J75;<E5' F8857@A' @' 7@58667A7=68' :8G:8 8@5 D 57<@' <>' 75$ 4:<F' 5;8' E:> C8' <>' 5;8' 7 A8' A6 C78:' ' ; B' A 7@8B' @<5;7@A0' ><:' ' C<E6B' <@69' 88' 5;8' >885' <>' F A@7>7C8@5' 7C8 5:8 F 0' =E5' @<' F<:80' =E5' @<J0' >:<F' 5;8' 5<G' <>' 5;8' B8 B' J 66' <>' :<C I' J;7C;' ; B' <' 6<@A' C6< 8B' F 9' ?78J0' ' J' 5;< 8' >7@8' A6 C78: ' >:<F' 5<G' 5<' =<55<F0' G<E:7@A' B<J@' 5;87:' 5:8 F 0' @8 :69' ' 6 :A8' ' 5;8' < <@ 0' >:<F' <@5' 6 @C0' >:<F' 5;8' < 80' @B' >:<F' 5;8' ' <F 8$;8' ;8 B' <>' <@5' 6 @C' 7 ' EG G<:58B' <@' 5;7 ' 7B8' =9' 5J<' =E5D 5:8 8 0' =85J88@' J;7C;' ? 5' A6 C78: ' B8 C8@B$ >' 5;8 8' 5;8' F< 5' <E5;8:@P' 5 I8 ' 75 ' :7 8' 5' 5;8' ><<5' <>' 5;8' G:8C7G7C8 ' J";7C;' > 66' 588G69' B<J@' >:<F' 5;8' 6<5580PNP' @B' 75 ' 5:8 F0' ' 75' !<7@ ' 5; 5' <>' 5;8' 7 A80' 7 ' CE5' 7@' 5J<' =9' @' 8@<:F<E ' ' ' <>' :<C I$ %8L50' 5<' 5;8' 68>50' C<F8 ' 5;8' 6 :A8 5' <>' 5;8' =E55:8 8 ' <>' J ;7C;' ' ; ?8' G<I8@0' 6F< 5' ><:F7@A' @' 7AE766' 7@' 75 86>$;8' @8L5' A6 C78:' .' B8 C8@B ' >:<F' '6 :A8' = 7@' J ;7C;' :8C87?8 ' 5;8' @<J ' <>' 5;8' EF F75 :7BA8' =85J88@' 5;8' < 8' @B' 5;8' ' <F 80' @B' 75' 7 ' B7?7B8B' >:<F' 5;8' 5;7:B' @B' 6 5' A6 C78:' d =9' @<5;8:' =E55:8 0' J ;7C;' !<7@ ' 5;8' EF F75 :7BA8' 5' ' G<7@5' =85J88@' 5;8' ' <F 8' @B' 5;8' 7A$' B8' 7<@@ 90X

P' ;7 ' A6 C78:' 7 ' @ F 8B' <@' 5;8' F G' &6 C78:' BE' <@5' 6 @C$
_' ;8' 6<558' 7 ' 5;8' @ F 8' A7?8@' 5<' 5;8' B<F8' <>' @<J' 5' 5;8' EF F75 <>' <@5' 6 @C$ >' &6 C78:' BE' ' F 8$ d ;7 ' 7 ' J75;<E5 ' @ F 8$

;8 A:8 5 =E55:8 8 =85J7L5 5;8 8 F A@7>7C8@5 7C8 5:8 F ; ?8 EG!7678B ' 6 :A8 G<:57<@ <> 5;8 8@<:F<E ' F 8 ' <> B8=:7 ' J;7C;' :8 B7 G< 8B 7@ :7BA8 ' :<E@B =<E50 @B :8 5:8J@ <?8:0 5;8 58:D F7@ 57<@ <> 5;8 &:7 C78:' B8 7 A8 7@ 5;8 (6 (8@7$;8 8 F<: 7@8 P E 8B 5< =8 C6 8B F<@A 5 5;8 J<@B8: ' <> 5;8 J<:6B$;89 :8 ?8:9 6 :A8 ><:' ' A6 C78:' <> 5;8 7S8 <> 5;8 7 A8$

;8 B7F8@ 7<@ ' <> F<: 7@8 ' :8 @<5 :E68B ;9 5;< 8 <> A6 C78: $

' F 66 A6 C78: ' ; ?8 6 :A8 F <: 7@8 0 @B F @9 6 :A8 <@8 ' ; ?8 F 66 F<: 7@8 $;8 7S8 <> 5;8 F<: 7@8 ' <> @9 A6 C78:' B8G8@B ' F 7@69 EG<@ 5;8 :8 ' <> :<CI E:> C8 5; 5 7 ' 8LG< 8B 5< 5F< G;8:7C 7@>6E8@C8 ' J75;7@ 5;8 ; 7@ B: 7@8B =9 5;8 A6 C78:' 0 EG<@ 5;8 @ 5E:8 <> EC;' :<CI0K J;85;8:' 75 7 ' >:7 =68 <:' :8 7 5 @50 @B EG<@ 5;8 B7G <> 5: 5 $ <: 7@8 ' F< 5 67I869 J766 =8 F 66 7> 675568 :<CI E:> C8 7 ' 8LG< 8B 0 =E5 J;8@ 6 :A8 <@8 ' :8 88@0 5;8@0 7@ 66 G:<= =76759 6 :A8 :8 ' <> :<CI0 E@C<?8:8B =9 @<J <:' 7C80 J766 =8 ><E@B 7@ 7F F8B7 58 C<@57AE759 5< 5;8 A6 C78:$;8 7 A8 A6 C78:' ; ' 6 :A8 <@8 0 =8C E 8 75 :8C87?8 ' B85:75E ' >:<F F @9 A:8 5 C;>> ' @B :7BA8 $ E5 7> 5;7 ' A6 C78:0 7@ 58 B <> 697@A0 ' 75 B<8 0 5 5;8 =<55<F <> ' 5:<EA;0 J8:8 5< >766 5; 5 5:<EA;0 7> 75 J8:8 5< C<F ' G685869 8@?86<G8 5;8 7AE7668 B8 :+6 58580 @B 5;8 <5;8:' F<E@D 5 7@ ' J;7C;' =<:B8:' 750 @B J8:8 5< B8 C8@B >:<F <@5 6 @C E@=:<I8@ =9 :<CI <:' :7BA80 75 J<E6B =8 ' B8 575E58 <> F<: 7@7C F 558:' ' 5;8 A:8 5 ' ' '<> &:88@6 @B$ 4<:' 7> ' C<E@5:9 <:' B7 5:7C5 7 ' ' C<?8:8B EG =9 A6 <787 0 5;8 F<: 7@8 ' F 9 =8 <> 5;8 ?8:9 F 668 5 B7F8@ 7<@ $+

;8 C<@5:7=E57<@ ' 5; 5 :8 EGG;8B 5< F<: 7@8 ' =9 A6 C78: ' 5;8F 86?8 0 >:<F 5;8 =: 7<@ <> 5;8 :<CI ' <?8:' J;7C67 5;87:' 7C8

P ' B< @<5 I@<J'5;8'<:7A7@ <>5;8'58:F' ' '8 67 E:8 9 'M?<6$ 7$ G$ 0 A M0 Z5;8 G8 @5 ' <> ; F<7F7L C 66 5;8 8 ;8 G ' <> B8;:7 ' $ ' ' <> 5;8 A6 C78:$'3 5 F 9 =8 7@>8::8B >:<F 5;7 ' 5; 5 5;8 58:F J ' ' 6<C 6 <@80 G8CE67 :' 5< ; F<E@7L$

5 @ 8L FG68 7 ' :8>8::8B 5< <@ G$ $ EC;' F<:8 :8F :I =68 C 8 ' F7A;5 =8 7@ 5 @C8B$

> 5 7 ' @<5 E E 6 5< >7@B 7E 6N @7<: ;78 ' 5< 6 7 A8 A6 C78: ' >8B =9 F @9 =: @C;8 ' B: 7@7@A F @9 B7>>8:8@5 = 7@ $; 5 7 0 7> 5;8 =: @C;8 ' :8 B: 7@7@A = 7@ ' J;7C;

G 8 :8 F7@E58 C<FG :8B J75;' 5;8 CCEFE6 57<@ ' J;7C;' :8 >E:@7 ;8B >:<F' <5;8:' <E:C8 $;8 8 A:8 5 :E==7 ; ;8 G ' :8 ><:F8B <@8 F 9 9 6F< 5 8@57:8690 >:<F' B8=:7 ' J;7C;' > 66 <:' 7 ' J ;8B B<J@ 5;8 >6 @I ' <> F<E@5 7@ <:' >:<F' C67>> ' =<:D B8:7@A A6 C78: @ @B :8 C<FG< 8B 5< ' ?8:9 67F758B 8L58@5 <@690 <> F 558:' 5; 5 7 ' A:<E@B : G8B <:' >768B <>> =9 5;8 >:7C57<@ <>5;8 7C8$

> 5;8 C<@5: :9 ?78J J8:8 5< =8 B<G58B 7> 75 C<E6B =8 F 7@D 5 7@8B5;5 Z A6 C78: $ ' $ ') ' && ' & ' $ ' ' 3 ' & $ ' ' 2 ' @B C:<JB 6<@A 8?8:9 5;7@A5; 5 7 ' F<? =68 < ' 5< ><:F 6 :A8 CCEFE6 57<@ ' <> B8=:7 ' 7@>:<@5 @B 6<@A5;87:' 7B8 03P5;8C<@C6E 7<@C<E6B@<5=8 :8 7 58B 5;8 A:8 58:' 5;8 A6 C78:5;8 A:8 58:' ;<E6B =8 5;8 F<: 7@8$

;7 ' B<C5:7@8 B<8 ' @<5 >7@B FEC;' > ?<E:' J75;' 5;< 8 J;< ; ?8 G8: <@ I@<J68BA8 <> J ; 5 A6 C78: ' B< 5 5;8 G:8 8@5 57F8$ 4:<F ' 8 E E:8 B<J@J :B ' 75 ; ' =88@ G<7@58B <E5 57F8 >58:' 57F8 5; 5 F<: 7@8 ' :8 C;78>69 ><:F8B >:<F B8=:7 ' C<F7@A >:<F :<CI ' <:' <7 3 ' 5;8 7C8 @<5 >:<F 5;8 =8B <?8:' J;7C;' 75 G 8 $ E5 F<@A 5 5;8 J:757@A ' <> F<B8:@ G8CE6 5<: ' EG<@ A6 C78: ' @B A6 C78: C57<@ 7@ =9A<@8 57F8 5 75 7 ' @<5 E@C<F F<@ 5< >7@B 5;8 @<57<@ ' 8@58:5 7@8B 5; 5 F<: 7@8 ' :8G:8 8@5 5;8 F<E@5 <> 6 V ' M EC;' 7 ' 5;8 58: F' 8FG6<98BN G8:><:F8B =9 A6 C78: <:' 5 68 5 :8 C<FG:7 8B <> F 558:' J;7C;' ; ' =88@ 8LC ? 58B =9 A6 C78: ' 5; 5 ? 5 F<: 7@8 ' ; ?8 @8C8 :769 =88@ G:<BEC8B =9 ? 5 A6 C78: ' @B 5; 5 ' A:8 5 8L58@ 7<@ <> A6 C78: K ' A6 C7 6 G8:7<B K @8C8 :769 C E 8 ' 5;8 G:<BEC57<@ <> ? 5 F<: 7@8 $ 5 7 ' @88B68 ' 5< C758 F<:8

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@ ' & $ ' $ ' =9 EAE 5E ' 858:: @@ @B 5;8 8?$ $ 76@8:$;8 75 67C ' :8 ;<5 7@ 5;8 <:7A7@ 6$

_' Z ;8 5<@8 ' 5; 5 :8 ><E@B EG<@ 5;8 EGG8:' 8L5:8F7578 ' <> A6 C78: ' :8 <> 5;8 F8@ 5E:8 ' 5;8 F<E@5 7@ ' J;7C;' :7 8 =<?8 =E5 ' 5;8 7C8 C ::78 ' 5;8 F' B<J@ 7@5< 5;8 ? 6689 5;89 ::7?8 =85J88@ :<CI ' <> ' 5<5 669 B7>>8:8@5 @ 5E:8 >:<F' 5;87:' <J@$3K ' 8 E E:C d $

5; @' <@8' <:' 5J<' 8L FG68 '5<' ;<J'5; 5' EC;' A8@8: 67 57<@ 'C @@<5' ;8' E 5 7@8B$ @@EF8: =68' 766E 5: 57<@ 'F7A;5' =8' HE<58B$

@'5;8'C; 7@' <>' <@5' 6 @C' <@8' F 9'C<FG :8'5;8' F<: 7@8 '<>' 5;8' 7 A8' J75;'5;< 8'<>'5;8' &6 C78:' BR :A8@578:8$;8'6 558:' A6 C78:' B: 7@' ' = 7@' 8HE 6' 5<' <:' 8LC88B7@A' 5; 5' <>' 5;8' ><: F8:' 0 =E5' 75' F<: 7@8' :8' F 66' C<FG :8B' J75;' 5;< 8' <>' 5;8' ><: F8:$ <:8' @<5 =68' 5766' 7' 5;8' B7 G :759' <>' 5;8' F<: 7@8' <>' 5;8' &<:@8:' A6 C78:' M5; 5' J;7C;' :8C87?8' <' F @9' =: @C;8' >:<F' 5;8' @87A;=<E:;<<B' <>' <@58' U< PN0' @B' <>' 5;8' VR E55A685 C;8:$;8' :8' B: 7@8B' 9' 5;8' &<:@8:' A:8 569' 8LC88B'5;8'= 7@' <>'5;8' VR @550' 985'5;8' F<: 7@8' <>' 5;8' VR E55' :8' 7@C<FG : =69'6 :A8:' 5; @'5;< 8' <>' 5;8' &<:@8:$ %<' <@8' 7' 67I869' 5<' 9'5; 5' 5;8' VR E55' @B' 7 A8' A6 C78:';?8' 8L7 58B' ><:' ' > :' A:8 58:' 68@A5;' <>' 57F8' 5; @'5;8' <5;8:' G 7:0' @' 8LG6 @ 57<@' FE 5' =8' <EA;5' F<@A 5'5;8' C E 8'5<' J;7C;':8>8:8@C8' ; '=88@' F B8$

<:8' 5:7I7@A' 5766' 7' 75' 5<' 88' 5;8' A:8 5'7@58:7<:' ' ' ' <>' &:88@6 @B' 6F< 5' J75;<E5' F<: 7@8 $;7' ? 5' 7C8 G6 58 E0' 65;<EA;' F 668:' 5; @' 75' J ' 7@' ><: F8:' 57F8 0' 7' 5766' <' 8L58@ 7?8' 5; 5'5;8' J;<68' <>' 5;8' A6 C78:' <>'5;8' 6G' F7A;5' =8' F8:A8B' 7@5<' 75' J75;<E5' 75 '=E6I'=87@A'G8:C8G57=69'7@C:8 8B$ >'5;8' 7S8' <>' F<: 7@8' =<:8' @9' <:5' <>' :86 57<@' 5<'5;8' 7S8' <>' A6 C78: 0' 5;8' F<: 7@8' <>' &:88@6 @B' ;<E6B' =8' > :' A:8 58:' 5; @'5;< 8' <>'5;8' 6G $

;7'7@58:7<:' 7C8 :8 8:?<7:' <>' &:88@6 @B0' 8@<: F<E' ' 75' 7 0' FE 5' =8' C<@ 7B8:8B' '=E5'5;8' :8F@ @5' <>' 'F ' J;7C;' J '7@C 6CE6 =69' A:8 58:0' @B' J;7C;' 7' E@G : 66868B' 5'5;8' G:8 8@5' 57F8' <E5 7B8' 5;8' @5 :C57C' 7:C68$)75;'5;8' 8LC8G57<@' <>' 6<C 67578' J;8:8'5;8':<CI' :8' 8 9' <>' B7 7@58A: 57<@0' @B'5;8'5: C8'<>' A6 C78: C57<@';?8'=88@' 5<' 'A:8 5' 8L58@5' B8 5:<98B0'5;8' J;<68' C<E@5:9'=8 :'5;8' F :I'<>' 5;8' A:7@B7@A' @B' G<67 ;7@A' <>' 7C8' 0 @B0' !EBA7@A' =9'5;8' >6 5@8 '<>' 5;8' CE:?8'<>'5;8' $ ' 2 ' @B' =9'5;8' G8:>8C57<@' <>' 5;8' G<67 ;' J;7C;' 5766' :8F 7@' EG<@'5;8':<CI' >58:'5;89'; ?8' E 5 7@8B

P' ;8' .@58:' ;8<BE60' U687@' 558:;<:@0' :875;<:@0' C;J :S80' VJ7667@A80' &:8@S0' * @B' <@58' <' 'A6 C78: 0' :8' 66' >88B8:'<>'5;8' &<:@8:$;8' VR E55' R8887?8'5;8' 78>8@7!7 558@0' 5<CI0' @B' C;<@=67;6'A6 C78:'<@69$

M567:<EA67 F @9 C8@5E:78 N 8L5:8F8 ? :7 57<@ <> 58FG8: 5E:80 5;8 G8:7<B BE:7@A ?B77C;EC;8>>8C5 J8:8 G:<BEC8B FE 5 ; ?8 J7B869 8LC88B8B 7@ BE: 57<@ 5;8 ¢A6 C7 6 G8:7<BR <> E:<G8$ > F<: 7@8 J8:8=E765>:<F F 558:8LC ? 58B=9A6 C78: 05;8 F<: 7@8 <> &:88@D 6 @B ;<E6B=8 5;8 A:8 58 5 7@ 5;8 J<:6B

;8 = 8@C8 <> F<: 7@8 EG<@ @B 5 5;8 58:F7@ 57<@ <> 5;7 A:8 5 7 BE8 5< 5;8 J @5 <>:<C; :7 7@A =<?8 5;8 7C8$P @ 5J< <CC 7<@ 0 7@ 10 J0 5 A6 @C80 5 68 5 HE :8 F768 <> 750 >:<F 5;8 EF F75 <> F 66 F<E@5 7@ <@ 75 <E5 I7:5 $ %<5 7@A68 G8 I <:7BA8 J 5< =8 88@ :7 7@A =<?80 @<: 7@A68 :<CI :8G< 7@A EG<@ 5;8 7C8$;8 C<E@5:9 J C<?8:8B EG =9A6 C78: 0 66 J 7C80 > : 5;8 898 C<E6B 88$>

;8:8 7 8?7B8@C80 5;8@0 5; 5 C<@ 7B8: =68 :8 <> 8LG< 8B :<CI E:> C8 :8 8 8@57 6 5< 5;8 G:<BEC57<@ <> 6 :A8 F<: 7@8 0 @B 5; 5 A6 C7 6 G8:7<B B< @<5 @8C8 :769 G:<BEC8 ? 5 F<: 7@8 $; 5 F<: 7@8 :8 @<5 =E765 EG <> F 558: J;7C;7 8LC ? 58B=9A6 C78: 0 =E5 7FG69 766E 5: 58 5;8 G<J8: <> A6 C78: > <: 5: @ G<:5 57<@ @B :: @A8F8@5$.

P :8>8:5< 5;<$ 8 G<:57<@ <> 75 J;7C;; ?8 88@ 7@ 5;8 @87A;=<E:;<<B <> 7 C< 9$;8:8 :8 F<: 7@8 7@ 5;7 B7 5:7C50 ;E5 5;89 J8:8><:F8B J;8@5;8 A:8 5 5:85C;8B @8 :8:5< 5;8 8 0K J;8@75 8@5 :F B<J@5;:<EA;5;8 ? 6689 7@ 5;8=865 <> 6 @B J;7C;@<J 7@58:?8@8 =85J88@ 8 @B A6 C78:$

5 ;8 7@58:7<: <> &:88@6 @B GG8 : 5< =8 = <6E5869 C<?8:8B=9A6 C78: =85J88@ "K1 "%$ 5$ 5;8: G8 I <> G8 I G881?@A5;:<EA;5;8 7C8 5< 5;8 %$ @B $ <>5;7 B7 5:7C50 =E5 E G8C5 5; 5 5;8 8 G8 I :8 EG<@5;8 <E5 I7:5 <>5;8 A:8 5 ;8 5:7 57<@ J;7C;:8 ><E@B EG<@:<CI <?8: J;7C; A6 C78: ;7?8 J<:I8B0 :8 E@7?8: 669;<6B=9 5;8 =68 5 J:758: 5< =8 C E 8B=9 ><:87A@ F 558: ;86B 7@ 5;8 A:7G <> 5;8 7C80 <: :<667@A =85J 88@ 75 @B 5;8 :<CI =8B Md 0 G$ 2 N$ > 5;8 G:7@C7G 6 <E:C8 <> 5;8 5<<6 J;7C;F I8 5;8 8 F :I 7 CE5 <>0 5;8 F :I ;<7BB0 <> C<E: 80 =8 68 @EF8:<E $

;8 :759 <> 5:7 57<@ 7@ 5;8 @87A;=<E:;<<B <> 5;8 A:8 5 <> &:88@D 6 @B J ?8:9 @<57C8 =68$;8:8 J G8:>8C57<@ <> A6 C7 57<@0 =E50 <?8:6 :A8 :8 0 5:7 57<@ 0 66E57@A 0 @B A:<<?7@A J8:8 8@57:869 J @57@A$)8 5;8:7@A0 E= 8HE8@569 5< 5;8 :85:8 5 <> 5;8 7C80 ; B @<5 5 I8@ G6 C80 5< @9 G8:C8G57=68 8L58@50 7@ 5;8 6<C 67D 578 5< J;7C; :8>8:$

5:7 57<@ 0 A:<<?7@A 0 @B >6E57@A 0 :8 88@ <@ 5;8 <E5 I7:5 6 @B0 =E5 5;89 :8 68 C<F F<@7@ &:88@6 @B 5; @7@ 5;8 6G $

) 8' B8 C8@B8B' 7@' <E:' 5: CI' 5<' 5;8' C' B8' <@7= 60P' @B' >:<F' 5;8@C8' J8@5' <?8:' 5;8' <6' B8' 6 ' 87A@8' 5<' 68 ' <585 0' J;8:8' J8' 68G50' <@' .E69' 0' C:< 8B' 57:8' <6' BE' <@5' <@BE' 5<' <@5 F7@8 ' M7@' ' ; :G' 5;E@B8: 5<:FN0' @B' 5;8' <6' B8' (<S ' 5<' ; F<E@7L$' J<' B 9 ' <@69' :8F 7@8B' ><:' 8LCE: 7<@ ' 7@' 5;7 ' @87A;=<:::;<<B0' @B' J8' :8 <6?8B' 5<' 8FG6<9' 5;8F' 7@' @<5;8:' 558FG5' 5<' C8@B' 5;8' 7AE7668' BR :A8@578:80' EG<@' J;7C;' F<E@5 7@' J8' ; B' =88@' C:E8669' B8>8 58B'!E 5' 87A;5' B 9 ' =8><:8$

5' ; GG8@8B' 7@' 5;7 ' J 9$K 87669' ; B' ' @<57<@' 5; 5' 5;8' C8@5 <>' 5;8' 7AE7668' C<E6B' =8' CC<FG67 ;8B' =9' ><66<J7@A' 5;8' :7BA8' 68 BD 7@A' 5<' 75 ' EF F75' >:<F' 5;8' <6' BE' ; :B<@@85$ 5' ; 6> G 5' 7L0' <@' 5;8' F<:@7@A' <>' 5;8' 5;0' J8' ><E@B' <E: 86?8 ' CC<:B7@A69' <@' 5;8' 5<G' <>'5; 5' G $7P' ;8' G :59' C<@ 7 58B' <>' <E:' >:78@B' <<:8' @B' ;7 ' AE7B8' $ 7F8:0' 87669' @B' ;7 ' AE7B8' 4: E <7 ' <E5585 0' F 9 86>' @B' 7C;86 :<S$ <' > :' 5;8' J8 5;8:' ; B' =88@' C 6F0' @B' 5;8' J 9' 8 9' 0 ;E5' 7F F8B7 5869' J8' ::7?8B' <@' 5;8' EF F75' <>' 5;8' G 0' J8' A<5' 7@5C+' ' >E:7<E ' J7@B$ 47?8' F7@E58 ' 8 :678:' J8' J8:8' J :F0K @<J' J8' J8:8' >:<S8@$ 47@8' @<J0' J;7:68B' EG' 7@5<' 5;8' ;0' G8@857R 58B' 8?8:9' C: CI' 7@' <E:' ; :@8 0' @B' 768B' <E:' I7@ ' ' G 7@>E669' ' 7>' 75' ; B' =88@' :8B' ;<5' 7@ 58 B' <>' >:88S7@A' C<6B$;8' 5885;' C; 558:8B' 7@?< ' 6E@5 :769K 5 6I7@A' J ' 6 =<:7<E ' 0 5;8'=:8 5;'>:<S8'7@ 5 @5 @8<E 69' 0 8 57@A' J ' B7 A:88 =68' 0 7557@A' J ' 7FG< 7=68'

P' ;8' C8@5' <>' 5;8' 7AE7668' B8' :>6 5858' >:<F' <E:' C FG' <@' <@5' E8' MQ0' ;<E: ' =<?8' 5;8' <' B8' <F= 6N' @B' 75 ' B8 C8@5' 5<' 68 ' <585 0' <CCEG78B' 2' ;<E: $ >58:' HE7557@A' 5;8' 6 I80' 5;8' :<E58' 68B' EG' 5;8' 6 :A8 5' <>' 5;8' : ?7@8 ' <@' 5;8' $ $ 7B8' <>' <@5' E80' @B' 5;8@' 6<@A' 5;8' 5<G' <>' 5;8' A8@569 7@C67@8B' @<J :7BA8' J;7C;' J ' 5'5;8' EF F75' <>' 5; 5' =E55:8 ' <>' 5;8' :86 5858$ 5' 5;8@' B8 C8@B8B' <@' 5<' ' =: @C;' <>' 5;8' &6 C78:' BR 6688' 6 @C;8' 0 5; :<EA;' ' A G' 7@' <@8' <>' 5;8' F7@<:' :7BA8 ' <>' <@5' E8$;8' C<E: 8' J ' 5;8@' 5: 7A;5' EG' 5;7 ' A6 C78:' M '67556' < ' <>' % $N0' E@576' 5;8' :7BA8' J ' 5:ECI' 5; 5' B8 C8@B ' >:<F' 5;8' EF F75' <>' 5;8' :86 5858' 7;' 5;8' B7:8C57<@' <>' <@5' 6 @C$;7 ' J ' ><66<J8B0' @B' 5;8' ;7A;8 5' MC8@5: 6N' G8 I' M Q0 ' >885N0' J ' ::7?8B' 5' =9' G 7@A' <?8:' 5;8' G8 I' %<$ ' M Q01 QN$ 5'7 ' G< 7=68' 5<' B8 C8@B' >:<F' 5;8' ;7A;8 5' G<7@5' <>' 5;7 ' F<E;5 7@' <@5<' 5;8' &6 C78:' B8' :86 5858$ ' J7 ;8B' 5<' B<G5' 5;7 ' C<E: 8' 7@' 2' =E5' J ' <E5?<58B$

<@5' E8' 7 ' ' > F<E '6<C 6759' ><:' C:9 5 6 $ < 1' B7 C<?8:8B' 8?8: 6' G :I67@A0' > 7:9' C ?8 0' 8@C:E 58B' J75;' F A@7>7C8@5' G8C7F8@ 0' F<I9' @B' C68 :0 ;E50' ' E E 60' 5;8' =8 5' J8:8' 7@!E:8B' =8><:8' 5;89' C<E6B' =8' B85 C;8B$

_' ;8' <6' BE' ; :B<@@85' 7 ' =<E5' 0 ' <:' 660 >885' =<?8' 5;8' 68?86' <>' 5;8' 8 $

) 8' 6<<I8B' 5<J :B ' <E:' F<E@5 7@$ 5 ' G8C5' J ' @<5' 8@C<ED : A7@A$ 678' :7BA8' 5; 5' 68B' EGJ :B ' ; B' ' G7I8B' :+58 G 67 B8B' J75;' F7@7 5E:8' 7AE7668 ; @I8B' EG' 5'5;87:' = 8 ' ;9' ;8 ?9' @<J ' =8B J ;7C;'68B'B<J@ 5'C<@ 7B8: =68' @A68 <@'<@8' 7B8'5<J :B '5;8' &6 C78:'B8' 687@<S <@'5;8'<5;8:'5<J :B '5;8' &6 C78:'BE' ; :B<@@85$ /@B8:' @9' C;CEF 5 @C8 75' J<E6B' ; ?8' =88@' ' 57>>'G78C8' <>' J<:I' 5<' C6 F=8:'EG'5; 5' J 9$:EB8@C8' @B' C<F><:5' C<E@ 8668B Z &7?8' 75' EG$3 '7 C:857<@' <?8::E68B' ? 6<E:$ <<:8' @B' 7F8:' C:< 8B' 5;8' <6 BE' ; :B<@@85' 5<' A<' 5<' :7>8:8 @B' J8'<5;8:' :85E:@8B' 5<J :B ' ; F<E@7L$

E5' J;8@' J8' A<5' <F8' B7 5 @C8' B<J@ 5;8' 8?76' G7:75' J;7C;' G:<FG5 ' F8@'5<' C8@B' F<E@5 7@ ' 58FG58B'E '5<' 5<G @B'5<'6<<I' = CI' 5' 5;8' 7AE7668' BR :A8@57>8:8$;8' I9' J ' C6<EB68 @<' J7@B' C<:BB' ;8' >865 @<:' 7A@' <>' 75' G8:C87?8BC 75' J ' <@69' 87A;5' <RC6<CI' 7@' 5;8' F<:@7@AC @B' 5;8:8 :7A;5' =8><:8' E J8' J' @D <5;8:' =: @C;'<>' 5;8' A6 C78:' 68 B7@A' ;7A;'EG' 7@5<' 5;8' F<E@5 7@K' > :' =<?8'5;8' <6 BE' ; :B<@@85K @B' '675568' C<E6<7:' :7 7@A' >:<F' 75 ' ;8 B' 6F< 5'5<'5;8'5<G' <>' 5;8'G8 I$;7 ' J ' C68 :69'5;8' :7A;5' :<E58'5<'5 I8$) 8'5E:@8B' = CI @B' J8@5' 5'75$

;8' A6 C78:' J ' 588G @B'5;8' @<J'AE669' :7 7@A' <E5' <>' 75' J ' 588G8:$ 8?8@' ;E@B:8B' 58G ' J8:8' CE5$;8@'5;8'C<E6<7:' =8C F8' ' 588G$) 8'5<<I'5<'5;8' :<CI ' <@'75 ' 68>5 @B' 5'6 5'A 7@8B'5;8' :7BA8 5' 'G<7@5' =<E5' ' >885' =<?8'5;8' <6$) 8'> C8B' =<E5' 5<'5;8' :7A;5 @B' J8@5' 6<@A' 5;8' :7BA8 I88G7@A' <@' <F8' @<J' ' 675568' =86<J' 75 'C:8 5 <@'5;8' 687@<S' 7B8$;8@' J8' A<5'5;8' J7@B' A 7@ =E5' @<' <@8'5;<EA;5' <>'5E:@7@A><:' J8' J8:8' J75;7@' Q '>885' <>'5;8' EF F75$

;8' L8 ' <>' :<S' @B' <E5585' J8@5'5<' J<:I' <@C8' F<:8 ><:'5;8' 6<G8' J ' =<E5' ' 588G' ' @<J' C<E6B' =8$ 5 ' E:> C8' J ' C<?8:8B' J75;' ' 6<< 8 A: @E6 :' C:E 5 B:9' @B'E558:69'7@C<;8:8@5 J;7C;' 67GG8B' J 9'7@' 5:8 I 'B7:8C569'75' J ' F8BB68B' J75;$;8' F8@' ; B'5<' CE5' 5;:<EA;'5;7 '7@5<' 5;8' <6B' =8B ' E@B8:@8 5; @B'5<' G E 8' 7@C8 @569'5<' : I8' J 9'5;8' G<JB8:9' 5E>> J;7C;' G<E:8B' B<J@' 7@' ;7 7@A' 5:8 F ' <?8:'5;8' ; :B' E= 5: 5EF$ /A;' ;<J

' H

6# 7 * 5 ' 5 & " % % 8) ' + ' 9 ' (' % (G <

<>> 5 ; 8 J <: I J ; 7C ; ; B =88@ CE5 ; <:5 < =:EG569 @B 68G5 ' =8><:8 5 5 ; 8 ; 685 B8 <A@ E$ @ 5 ; 8 5 ; =<E5 F7BB 9 J8 : :7?8B EG<@ 5 ; 8 E F F75 <> 5 ; 8 7AE7668 @B ><E@B 5 ; 5 J8 ; B C5E 669 =88@ J75 ; 7@ <@8 ; E@B:8B >885 <> 75 J ; 8@ J8 5E:@8B = C I EG<@ 5 ; 8 >7: 5 558 F G5$

5 J ' 5:7E F G ; 5< 87 / 9$ @ 5 ; 7 @87A ; =<E: ; <<B ; 8 ; B G8:><: F8B 5 ; 8 >8 5 M7@ N <> !<7@7@A 5<A85 ; 8 : Z 5 J< F<E@5 7@ 8 C ; =<E5 0 >885 ; 7A ; 5 @B7@A <@ 5 ; 8 F G =<E5 F 768 @B ; 6> G :5$3 <@A =8><:8 J8 F B8 5 ; 8 C8@5 ; 8 ; B G:<CE:8B 8?7D B8@C8 J ; 7C ; C<E6B @<5 =8 7F GEA@8B 5 ; 5 5 ; 8 <7@58 B8 67@8 >7C5757<E EF F75 J ; 7C ; ; B>7AE:8B <@ <5 ; 8 : 5 ; @ 5 ; 8 7AE7668 BR :A8@578:8 @B ; 8 ; B CC<:B7@A69 <=6758: 58B 75 >:<F 5 ; 8 G:867F7@ :9 B: >5 <> ; 7 F G$) 8 J 5 ; 5 75 J :7A ; 5 5< B< <$; 8 <7@58 B8 67@8 B B7B @<5 8L7 5$) 8 ; B <CE6 : B8F<@ 5: 57<@ <> 5 ; 8 CCE: C9 <> ; 7 G:8?7<E <= 8:? 57<@ $

B< @<5 I@< J J ; 7C ; 5< BF7:8 F< 50 5 ; 8 >7B86759 <> :$ 87669R F G <: 5 ; 8 7@B8> 57A =68 7@BE 5:9 =9 J ; 7C ; 5 ; 8 F 58:7 6 J8:8 CD CEFE6 58B >:<F J ; 7C ; 75 J C<@ 5: C58B$ < F8@ J ; < :8 <E@B 7@ ; F= 75 F 9 =8 FE 7@A 5< ::7?8 <@ EF F75 M J8 B7B EG<@ 5 ; 8 5<G <> <@5 ' <68@5N 7557@A 5:7B8 :7BA8 5<< @ ::<J 5< 5 @B EG<@0 <: 5< B<= 5568 J75 ; >8:<C7<E J7@B M J8 B7B <@ 5 ; 8 5<G <> 5 ; 8 7AE7668 B8 :B6 5 58N 0 <: 5< >886 ; 6> >:<S8@ 7@ F7B EF F8: M J8 B7B <@ 5 ; 8 7AE 68 BR :A8@578:8N$ E5 5 ; 8:8 7 L5:8F 869 ; 5568 FE 8F8@5 7@ F I7@A 185C ; 8 @B @<58 E@B8: EC ; C<@B757<@ $ 85 EG<@ 66 5 ; 8 8 8LG8B757<@ 0 E@B8: 5 ; 8 F< 5 B?8: 8 C7:CEFD 5 @C8 0 @B 7@ 5 ; 8 F< 5 5:97@A 75E 57<@ 0 :$ 87669R = : 7@ @B >7@A8: J8:8 6J 9 5 J<: I$; :<EA ; <E5 66 ; 8 J 8?8: 67I8 0 5 ; 8 F8 A8@7 60 8HE =68 58F G8:8B C<F G @7<@0 J ; 85 ; 8 : ?7C5<:7<E <: J ; 85 ; 8 : B8>8 58B 0 6J 9 :8 B9 5< C:7>7C8 ; 7 <J@ B8 ; 8 5< E75 <E: C<F><:5 @B C<@?8@78@C8$ 9 ; GG9 E@7<@ <> EB C759 @B G:EB8@C80 C<F =7@8B J75 ; E@57:7@A G8: 8?8: @C80 ; 8 8?8@5E 669 C<F G6858B ; 7 86> 7F G< 8B 5 I K J<: I J ; 7C ; J<E6B ; ?8 =88@

7@5<68: =68$ 8LC8G5$ $ 6 =<E:$ <>$ 6<?8K @B$ *J;7C;0 ><:$ $ 7@A68$ 7@B7"?7BE 60 F 9$"J866 @7A;$=8$58:F8B$ 8:C5B8 @$

) 8$ 8G : 58B$ EG<@$ 5;8$ 68?860 G :5$ <>$5;8$ &6 C78:$ BR :A8@578:80 8766 9$A<7@A$J75;$ 9<5$ @B$; :685$ $5;8$C; 685$<>$ <A@ @$ @B$ B8$6 $ 8@B @50 J;76 5$ 0 J75;$:<S0><66<J8B$5;8$:7A;5$= @I$<>$5;8$ A6 C78:$5<$5;8$?766 A8$ <>$:A8@57+:8P 5$1$ " $ J8$ 8@58:8B$5;8$;EF=68$7@@0 @B$58@$ F7@E58$ >58:J :B$;8 :B$5;8$8C;<8$ <>$5;8$ C @@<@$ J;7C;$ J8:8$ >7:8B$ EG<@$5;8$ ::7? 6 <>$ <E:$ C<F: B8$ 5$; F<E@7L$7"

1$ 65$;3667$:7 87#95$4<36$.7%78$4<34 I34<

4$ <5$%7 85# ;<3%54 :5$ 7?636$ 9$ <7#69$ 83%J 6?$.#7=$ *<3=7A6 $ #7=$ 4<56;5$47$ 4<5$ 9A= = 4 7.$4<5$?A%5$:> #?5647 5#5,$36:$:786$47$4<5$ %3?5$7.$4<5$ 93=5$63=5,$7;;AI 5:$& $<7A#9

G 8 ' J ;7C ;' J8:8 I@<J@$P 8 ; B ;<J@ 5< F8 EG<@ ' E><E:R '
F G 5; 5 ' B7:8C5 67@8 C<@@8C57@A 5;8 5J< G6 C8 G 8B 8L C569
<?8:' 5;8 B8G:8 7<@ =85J88@ 5;8 V7@ 6 <5;;<:@ @B 5;8 8; 667
><:@$ 8 J ' C<@>7B8@5 5; 5 ' G A8 C<E6B ;8 8>>8C58B <?8:' 5;7 '
B8G:8 7<@ @B J ' @AE7@8 5; 5 75 J<E6B M7@ C<@ 8HE8@C8 <>'75 '
B7:8C5@8 N G:<?8 5< ;8 ' HE7CI8:' :<E58 5; @ 5;8 C7:CE75<E ' <@8 '
<?8:' 5;8 :7>5!<C;' @B 5;8 <6 ' E: @B$

8 J ' J 757@A E @B J8 7F F8B7 5869 G:<C88B8B EG 5;8
? 6689 @B C:< '5;8 ><5 <>5;8 V7@ 6 A6 C78:'5<5;8 :G75855 ' 6G
J;8:8 'C; 685 J ' EGG< 8B 5< 8L7 5 7@ J;7C;' J8 F7A;5 G '5;8
@7A;5) 8 ><E@B 75 5 68@A5;0 X ';E5 75 J '@<5 8HE 6 5< <E:' 8LG8C5D
57<@ @ 5 J ' @<5 <@8 <>5;< 8 >7@8 57F=8:8B C; 685 @ J75;' ;EA8
<?8:; @A7@A 8 ?8 @ C<?8:8B J75;' G7<E ' 8@58@C8 ' C :?8B@7@' E@7@D
58667A7=68 C; : C58: $ 5 J ' ' ;<?86 A:<J7@A ' 75 J8:8 <E5 <>
5;8 ;766 7B8 :<<>8B J75;' :<EA;' 6 = '<> 6 59 5<@8 J75;<E5 ' B<<:'
<:' J7@B<J' E::<E@B8B =9 HE AF7:8 '<> <:BE:8 @B B7:5 <> 8?8:9
B8 C:7G57<@$

'><E6 @ 57?8 7@?758B E '5< 8@58:$;8 7@58:7<:' J ' B :I =E5
J;8@ <E:' 898 ' =8C F8 CCE 5<F8B 5< 5;8 A6<<F J8 J' 5; 5 <E:'
G 6 C8 J ' 7@ G6 @ =<E5 ' =9 Q ' >8 85 <@ <@8 7B8 75 J '
C :C869 >7?8 >885 ;7A;0 =E5 <@ 5;8 <5;8:' J '@8 :69 8?8@$ @5;7 '
7B8 5;8:8 J ' ': 7 8B G6 5><:F =<E5 7L' >885 J7B8 67558:8B J7567
B7:59 5: J @B 5766 BE578:' ;88G I7@ $;7 ' J ' 5;8 =8B:<<F$
;8 :8F 7@B8:' <>5;8 J7B5;' <>5;8 G :5F8@5 J '5;8 G :6<E:$;8
:8 5 J '5;8 > C5<:9$;88 8 J '5;8 :57C68 J;7C;' J ' =87@A
> =:7C 58B @B 5;8 ><E6 @ 57?8 J ' 8@A A8B 7@ 75 ' F @E> C5E:8$
8 J 'A :@7 ;8B=8;7@B J75;' ':8AE6 :' C<J;8:BR '<@8 68AA8B 5<<60
J;7C;' A ?8 ;7F ' HE88:0 E@C @@9 6<<I' J;8@ 75 J ' 868? 58B 7@
5;8 7:' ;8 =8@5 <?8:' 7@5< ;7 '5E=' 0 ><:'5;8 F I7@A <>' ;7 ' C=88 8
:8HE7:8B ;7F 5< =6<J' 7@5< ' 5E=' ><:' 58@ F7@E58 ' 5 '57F8$ 8

P ;8 <6 B8 V7@ 6 <:' :7>5!<C;0 =85J88@ 5;8 :7>5;<F' @B 5;8 =8:' & =86;<F' 0
@B 5;8 <6 'E: @B =85J88@ 5;8 6 5 F8@57<@8B F<E@5 7@ @B 5;8 ' 8@5 6 @C;8$
4<:' <E:' :<E58 >:<F' V7@ 6 5< V8:F 550 88 5;8 F G <>5;8 ? 6689 <>' V8:F 550
5 7A;' =<?8 5;8 &6 C78:' B8 <:@7@A 5 5;8 ><<5 <>5;8 :858 B8 765<@$

5;8@ HE 558B <@ ;7 ' 5<<6 5< A 7@=:8 5;0 @B 5<<I ' >8J J ;7>> ' 5 ' ;<:5 G7G80 >58: J ;7C;' ;8 =68J J 9 F<:8 ?7A<:<E 69 5; @ =8><:8$) 8 J8:8 5<6B 5; 5 5;7 ' G:<C8BE:8 J ' @8C8 :9$ 5 GG8 :8B 5< E ' 5< =8 @ 59$ 5 CC<E@5 0 G8:; G 0 ><:' 5;8 >6 ?<E:' G< 8 8B =9 C8:5 7@ J7 ' C;88 8 $

7A0 =6 C I0 @B 68 B8@ C<6<E:8B C6<EB ' :<668B EG >:<F V7@ 60 @B F85 7@ C<F= 5 <@ 5;8 <:@7@A A6 C78:' J75;' <5;8: ' J ;7C;' B8 C8@B8B >:<F 5;8 <5; ;<:@$ '<J@ C F8 5;8 : 7@ 7@5<::8@5 0 @B C: ;' J8@5 5;8 5;E@B8:$;8 ;8:B =<9 ' ;E::78B E@B8:' ;8658:0 ><:' 5;8 >:7A;58@8B C 5568 @88B8B @< B:7?7@A0 @B 5<:8 G<@5 @8<E 69 B<J@ 5;8 6G ' 7>' :E@@7@A ' 588G68 C; 8$ 8@0 C<J 0 G7A 0 ;88G0 @B A< 5 ' ><:A<5 5;87:' FE5E 6 @7F< 7578 0 @B :E ;8B 5< 5;8 <@69 :8>EA8 <@ 5;8 F<E@5 7@$;8 G866 J ' =:<I8@ J ;7C;' ; B ;<E@B 5;8 868F8@5 ' ><:' <F8 J88I ' G 50 @B 5;8 O2 ' >:<F 5;8) 87 ;<:@ 5< < 8 < J ' 5;8 5;8 5:8 7@ J ;7C;' 5;89 G8@5 5;87:' >E:9$

' E668@ F<:@7@A ECC88B8B @ @A:9 @7A;5$) 8 J8:8 E@B8C7B8B 7@ <E:' C<E@C76 J ;85;8:' 5< B? @C8 <:' 5< :85E:@ B<J@ 5;8? 6689$ &<<B 88F8B 67I869 5< <?8:G<J8:= B 0 <0 5 $2 0 J8 68>5 5;8 C; 685 ' 2 ' ><:' <E:' G ' k F7B 5 5;8 F< 5 8@C<E: A7@A E: @C8 ' >:<F 66 5;8 G8<G68 <@ 5;8 6G 5; 5 J8 @88B @<5 B7 5:8 ' <E: 86?8 ' =<E5 5;8 J8 5;8:0 ' 75 J ' @<5 G< 7=68 5< A85 5< 5;8 G<7@5 5 J ;7C;' J8 J8:8 7F7@AX$P

E:' C<E: 8 68B E ' 5 >7: 5 <?8:' <:B7@ :9 F<E@5 7@ 6<G8 0 @B 5;8@ <?8:' ' >6 5 8LG @ 8 <> A6 C78:$ 8><:8 5;7 ' J ' HE7558B0 75 J ' @88B>E6 5< B858: F7@8 5;8 8L C5 67@8 J ;7C;' J ' 5< =8 5 I8@$) 8 J8:8 B7?7B8B =85J7L5 5J< <G7@7<@ $ ' B?<C 58B 5; 5 ' C<E: 8 ;<E6B =8 588:8B BE8 <E5;0 @B 5; 5 5;8 EGG8:' G6 58 E <> 5;8 <:@7@A A6 C78:' ;<E6B =8 55 7@8B =9 F I7@A ' A:8 5 B85<E:' 5< <E:' :7A;5$;7 ' J ' @8A 57?8B J75;<E5 ' B7?7 7<@$ 7F8:' B8C6 :8B 7@ > ?<E:' <> F I7@A ><:' <F8 :<C I ' 5< 5;8 <E5; J8 5 <> 5;8 C= 66;<:@0 @B 55 7@7@A 5;8 EGG8:' G6 58 E <> 5;8 A6 C78:' =9 F<E@57@A 5;8F$:<S B?7 8B ' F7BB68 C<E: 80 EG <F8 ?8:9

588G' @B' =:<I8@' A6 C78:$:<SR' :<E58' 88F8B' 67I869' 5<' 5E:@' <E5' 5<' =8' 7FG: C57C =68@ =8C E 8' FEC;' 58G CE557@A' J<E6B' =8' :8HE7:8B' EG<@' 75$ 7F8:R' :<CI' B7B' @<5' 6<<I' A<<B@ 5;89' J8:8@ G< 7=69@ E@ 76 =68$ 5;<EA;5' =<5;' :<E58' J8:8' = B@ @B' B8C67@8B' 5<' ?<58' ><:' 875;8:' <>' 5;8F$ <<:8' ;8 75 58B@ =@8:' A ?8' J 9@ @B' :<SR' :<E58' J ' B<G58B$

8' B7B' @<5' A<' ?8:9' > :@ ;<J8?8:@ =8><:8' ;8' ><E@B' 5; 5' ;8' ; B' E@B8:5 I8@' 5<<' FEC;@ @B' >58:' kA6 @C7@A' <CC 7<@ 669' :<E@B' 5' E @ 5<' 88' J ; 5' J8' 5;<EA;5' =<E5' 75@ EAA8 58B' 5; 5' 75' F7A;50' >58:' /@ =8' J7 8:' 5<' 5 I8' 5<' 5;8' :<CI' <>' 5;8' C; 66;<:@X$; 5' 7' 5<' 9@ ;8' EAA8 58B' 5;8' = @B<@F8@5' <>' ;7' <J@' @B' 5;8' B<G57<@' <>' 7F8:R' :<E58$ %<' <@8' <GG< 8B' 5;8' C; @A8' <>' G6 @0' @B@ 7@' 5;8' = 8@C8' <>' 7@ 5:EC57<@' 5<' 5;8' C<@5: :9@ ;8' G:<C88B8B' 5<' CE5' 58G' C:<' @' 7C8 6<G8' 5<J :B' 5;8' :<CI $

85' 5;8' :8 B8:' @<J' C 5' ;7' 898' EG<@' 5;8' F G' <>' 5;8' ? 6689' <>' V8:F 550@ @B' ;8' J7/' 88' 5; 5' J ;8@' J8' HE7558B' 5;8' 6<G8' <>' 5;8' :G75855' 6G0@ J8' 5<<I' <E5; 8 58:69' C<E: 8' <?8:' 5;8' <:@7@A' A6 C78:$) 8' ; 658B' 5<' 85568' 5;8' G6 @' <>' 55 CI' ;<:569' >58:' J8' A<5' EG<@' 5;8' 7C8$;8' :<CI' <>' 5;8' C; 66;<:@0' J;< 8' C8@5' 7F8:' :8C<F F8@B8B0@ J8:8' 5;8@' 5<' <E:' <E5; 8 5$:<SR' G:<G< 8B' :<E58' J ' 5<' 5;8' <E5; J8 5' <>' 5;8' :<CI 0' @B' 68B' EG' 5;8' <E5;8:@' 7B8' <>' '?8:9' 588G' @B' =:<I8@' A6 C78:$P' ;8' G :5' ;8' 7@58@B8B' 5<' 5: ?8: 8' J 0' 7@' ' 8@ 80' E@B<E=58B69' G: C57C =68$ 8' A ?8' 75' EG' =8C E 8' 75"' J<E6B' ; ?8' 7@?<6?8B' 5<<' FEC;' 58G CE557@A$ E5' 5;8' G :5' <>' 5;7' A6 C78:' J;7C;' 7@58:?8@8B' =85J88@' ;7' :<E58' @B' 7F8:R' :<CI' J 0' 7@' 5;8' F< 5' C<FG6858' 8@ 8' <>' 5;8' J<:B0@ 7FG: C57C =68$ 5' G 8B' <?8:' C<@57@E 57<@' <>' 5;8' :<CI 0' @B' J ' =:<I8@' 7@' ; 6>' =9' 5;8F$;8' EGG8:' G<:57<@' J ' 8G : 58B' >:<FY"5;8' 6<J8:' G<:57<@' =9' 6<@A' 6<G8' <>' 7C8' 5; 5' ; B' =88@' =E765' EG' >:<F' 5;8' B8=:7' <>' 5;8' A6 C78:' J;7C;' ; B' > 668@' >:<F' =<?8$;8'><<5' <>'5;7' 6<G8' J ' E:<E@B8B' =9' 7F F8@ 8' HE @57++8' <>'5;8 6 :A8:' ? 6 @C;8' =6<CI $;8 8' J8' C E57<E 69' I7:58B0@ @B' J;867' R :<S' ; 658B' 5;89' ; B' =88@' 68>5' > :6N86<J0@ @B' J8' J8:8' ; 6> J 9' EG

5;8 7B8 <> 5;8 A:8 5 6<G8 J;7C;' 68B 5< 5;8 = 8 <> 5;8 7C8 J 66 ;G?8$

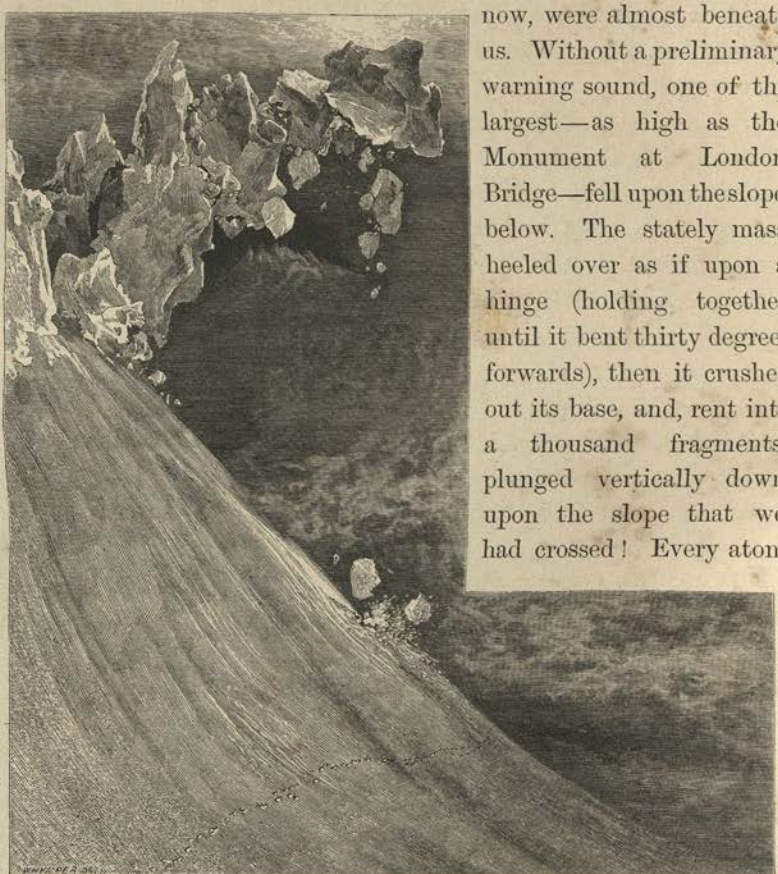
C:< ' 5;7 ' 7C8 6<G8 :<S E<J G:<C88B8B 5< CE5$ 5 J ' 8L CE57@A ' >6 @I' F<?8F8@5 7@ 5;8 > C8 <> @ 8@8F9 ;9 J;<F' J8 F7A;5 ;8 55 CI8B 5 @9 F<F8@5$;8 G8:76 J ' <=?7<E $ ' 5' J ' ' F<@ 5:<E ' ></9$ 5 J ' ><<6; :B7@8 $ ' :85:8 5 ;<E6B ; ?8 =88@ <E@B8B$P

Z ' F @<5 ; F8B 5< C<@>8 03 J:<58 <<:8 7@ ;7 ' .<E:@ 60 Z5; 5 BE:7@A 5;8 J;<68 57F8 J8 J8:8 C:< 7@A 5;7 ' 6<G8 F9 ;8 :5 J ' 7@ F9 F<E5;0 @B ' @8?8:' >865 :8678?8B >:<F EC;' ' 6< B <> C :8 ' J;8@0 >58:0 ' EGG< 80 ' G A8 <> =<E5 5J8@59 F7@E58 0 J8 A<5 <@ 5< 5;8 :<CI ' @B J8:8 F >859$ $ $ $ ' ; ?8 @8?8:' ;8 :B ' G< 75798 < 5;' C<F8 >:<F 6F8: ' F<E5;0 ;E5 5;8 6 @AE A8 7@ J;7C;' ;8 I8G5 EG ' :E@@7@A C<F F8@5 :90 F<:8 5< ;7F 86> 5; @ 5< F80 ' J8 J8@5 6<@A0 J ' 5:<@A8:' 5; @ ' ;<E6B ; ?8 A7?8@ ;7F C:8B75 ><:' E FA$ 7 ' G:<F7@8@5 >8867@A 88F8B 5< =8 <@8 <> ' ' 5; 5 J8 ;<E6B =8 7@ EC;' ' G< 757<@0 @B 86> :8G:< C;' 5 =87@A ' G :59 5< 5;8 G:<C88B7@A0 J;768 5;8 8FG; 57C J 9 7@ J;7C;0 5 7@58:? 6 0 ;8 8LC6 7F8B0 ć WE7CI0 =8 HE7CI0R E>>7C78@569 =85<I8@8Bc;7 6 :F$3

> 5 J ' @<5 @8C8 :9 5<" BF<@7 ;' :<S 5< =8 HE7CI$ 8 J ' >E669 ' 67?8 5< 5;8 :7 I' ' @9 <> 5;8 <5;8: $ 8 5<6B F8 >58:D J :B 0 5; 5 5;7 ' G6 C8 J ' @<5 <@69 5;8 F< 5 B @A8:<E ' ;8 ; B 8?8:' C:< 8B0 =E5 5; 5 @< C<@ 7B8: 57<@ J; 58?8:' J<E6B 58FG5 ;7F 5< C:<R ' 75 A 7@$ @>E669 B7B ;8 8L8:5 ;7F 86> 5< 8 C G8 >:<F 5;8+ 7FG8@B7@A B8 5:EC57<@$ 7 ' ;8 B0 =8@5 B<J@ 5< ;7 ' J<:I0 @8 >8:' 5E:@8B 5< 5;8 :7A;5 <:' 5< 5;8 68>5$ $ @80 5J<0 5;:880 J8@5 ;7 ' L80 @B 5;8@ ;8 58GG8B <@ 5< 5;8 G<5 J;8:8 ;8 ; B =88@ CE557@A$ <J G 7@>E669 7@ 8CE:8 ;<E6B J8 ; ?8 C<@ 7B8:8B 5;< 8 58G ' 5 @9 <5;8:' 57F8 ' E5 @<J0 J8 5;<EA;5 <> @<5;7@A+ =E5 5;8 :<CI ' 7@ >:<@50 @B <> 5;8 ;7B8<E ' M ' 6E:C;7@A <?8:' =<?8 E 0 GG :8@569 7@ 567G C5 <> > 667@A$

@ ;8 :8 G<@ 7=76759 B7B @<5 :8 5 J75;' :<S 7 ' G :5 J ' 5< B?7 80 =E5 @<5 5< B7:8855

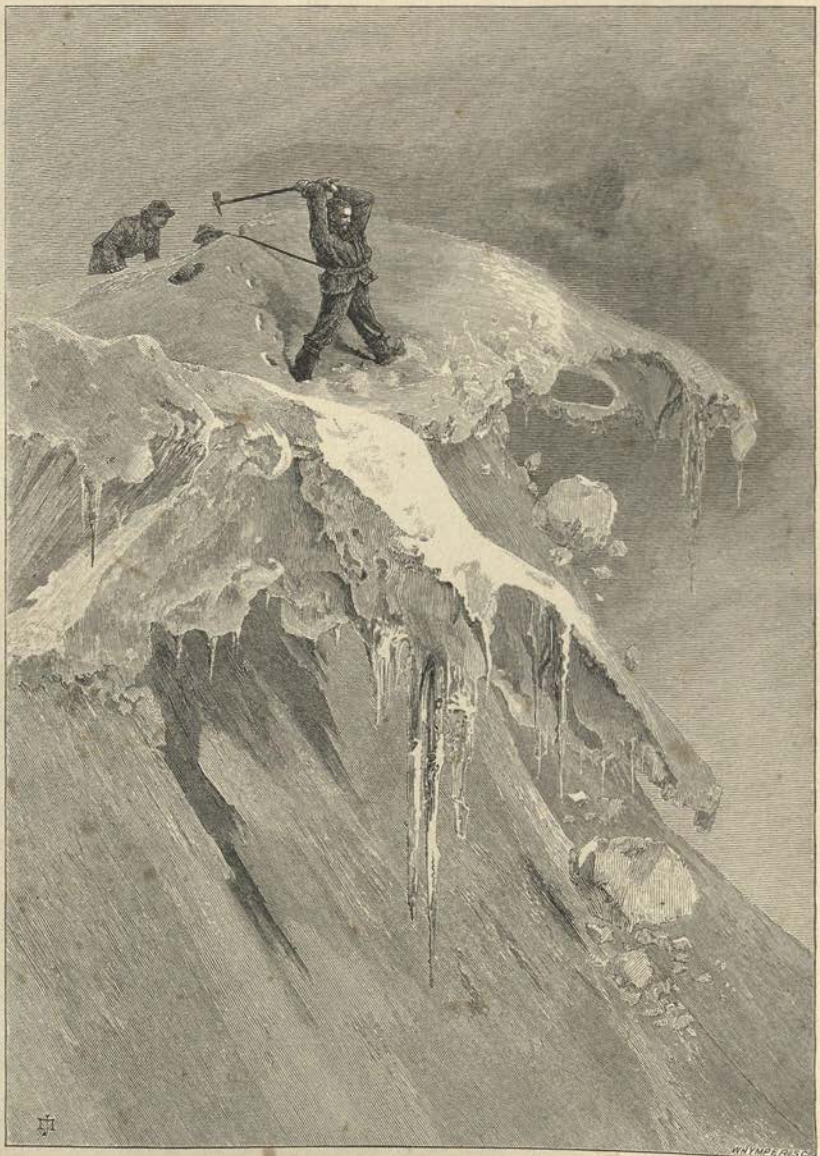
We got to the rocks in safety, and if they had been doubly as difficult as they were, we should still have been well content. We sat down and refreshed the inner man; keeping our eyes on the towering pinnacles of ice under which we had passed; but which, now, were almost beneath us. Without a preliminary warning sound, one of the largest—as high as the Monument at London Bridge—fell upon the slope below. The stately mass heeled over as if upon a hinge (holding together until it bent thirty degrees forwards), then it crushed out its base, and, rent into a thousand fragments, plunged vertically down upon the slope that we had crossed! Every atom



ICE-AVALANCHE ON THE MÖMING PASS.

of our track, that was in its course, was obliterated; all the new snow was swept away, and a broad sheet of smooth, glassy ice showed the resistless force with which it had fallen.

It was inexcusable to follow such a perilous path, but it is easy



THE SUMMIT OF THE MOMING PASS IN 1864.

5' J ' J866' ><:' E ' @<J'5; 5' J8' ; B' EC;' ' F @' '68 B8:$ @' 7@>8:7<:0 <:'68 'B :7@A' AE7B80' J<E6B' ; ?8' ;8 75 58B'5<'8@58:'EG<@'5;8' B8 C8@5'7@' 'B8@ 8' F7 50 @B' :<S' ;7F 86>' "?9<E6B' ; ?8' B<@8' :7A;5' 5<' G E 8' ; B' ;8' =88@' 68 ' F A@7>7C8@5' 7@' $ O ' 8' C58B0' : 5;8:'5; @' 7B0' Z) ;8:8' @<J'678 '> 50 5;8:8' F @'C @'A<'0 J;8:8' 7C8' 8L7 5 0' ' J 9' F 9' =8' CE50 75'7 ' 'HE8 57<@' <>'G<J8:'0 ' ; ?8' 5;8'G<J8:0K 66' 9<E' ; ?8' 5<' B<'7 '5<'><66<J'F8$3' :E690' ;8' B7B' @<5' G :8' ;7F 86>0' @B' C<E6B' ;8' ; ?8' G8:><:F8B' 5;8' >8 5 ' EG<@' 5;8' =< :B ' <>' '5;8 5:8'5; 5' ;8' B7B' EG<@'5;7 ' <CC 7<@0' ;8' J<E6B' ; ?8' =:<EA;5' B<J@'5;8' ;<E 8' J75;'5;E@B8: ' <>' GG6 E 8$ 8:8'7 ' J; 5' <<:8' J:<58'7@'$ ' .<E:@ 6$

k ;8' B8 C8@5' =<:8' ' 5:<@A':8 8F=6 @C8'5<'5;8' <6' B8' 76 558'0' =E5' J ' ?8:9' FEC;' 588G8:' @B' 65<A85;8:' F<:8' B7>>7CE650' J;7C;' 7 ' 97@A' 'A<<B' B8 6$:<S' J ' 7 ' ;7 ' 868F8@50' @B' 868C58B' ;7 ' J 9' J75;' F :?866<E ' A C759' J;768' 7F8:' ; B' @'8HE 669' ;<@<E: =68' @B0' G8:; G 0' F<:8' :8 G<@ 7=68' G< 5'7@'5;8' :8 :0' J;7C;' ;8' I8G5' J75;' ;7 ' E E 6' 58 B7@8 $ $ $ $ @8' G :57CE6 :' G A8' ; ' 7FG:8 8B' 75 86>'<@' F9' F7@B' ' <@8' <>' 5;8' F< 5' @8:?<E ' '; ?8' 8?8:' F B8$ (8' ; B' 5<' G ' 6<@A' 'C:8 5' <>'7C80' ' F8:8' I@7>8 8BA80K <@' <E:' 68>5' '=:< B'C:8? 8$);<8'=<55<F' J '6< 5'7@'=6E8' ; S80' @B' <@' <E:' :7A;50' 5' @$ @A68' <>' 1 `0' <:'F<:80' ' 6<G8' > 667@A' 5<' ' 7F76 :' AE6>' =86<J$:<S0' ' ;8' J8@5' 6<@A' 5;8' 8BA80' C;7GG8B' F 66' @<5C;8 '7@'5;8'7C80'7@' J;7C;' J8'G6 C8B' <E:'>885' J75;'5;8' 5<8 ' J866' 5E:@8B' <E50' B<7@A' 66' J8' I@8J'5<' G:8 8:?8' <E:'= 6 @C8$);768' 58GG7@A' >:<F' <@8' <>' 5;8 8' G:8C :7<E ' ><<5;<6B ' 5<' @<5;8:0' ' 5 AA8:8B' ><:' ' F<F8@5$ ' ; B' @<5' :8 669'6< 5' F9' ><<57@A'0 =E5' 5;8' A<@7 8B' 5<@8' 7@' J;7C;' 7F8:0' J;<' J '=8;7@B' F80' <@' 887@A' F8' J ?8:0' 8LC6 7F8B0' Z 67G' @<50' 7:'3' A ?8' E ' @' 8?8@' 67?8;8:' 7FG:8 7<@' 5; @' J8' 6:8 B9' ; B' <>' 5;8'7@ 8CE:759' <>'5;8' G< 757<@$ $ $ $ @8' ;EA8'C; F0' J;< 8' EGG8:'8BA8' J ' > :' =<?8' 5;8' 6<J8:' <@80' C<E6B' @875;8:' =8' 68 G8B' @<:' 5E:@8B0' @B' 5;:8 58@8B'5<' G:<?8' @' 7@ EG8: =68' = ::78:$ E5' :<S' ;<J8B' ;7F 86>' 8HE 6' 5<' 5;8' 8F8:A8@C9$ 86B' EG$=9' 5;8' :8 5' <>' 5;8' G :590' ;8' CE5' ' 8:78 ' <>' ;<68 ' ><:' 5;8' ; @B ' @B' >885' B<J@' @B' 6<@A' 5;8' 6F< 5' G8:G8@

B7CE6 :' J 66' <>'7C8' ><: F7@A' 5 ; 8' EGG8:' 7B8' <>' 5 ; 8' 8 2 ' ' < J @' 5 ; 7 ' 67GG8 : 9' 5 7 : C 8' J 8' C : 8G5 0' J 75 ; ' <E :' > C8 ' 5<' 5 ; 8' J 660' E@576' ' G<7@5' J ' :8 C ; 8B' J ; 8 : 8' 5 ; 8' J 7B5 ; ' <>' 5 ; 8' C ; F' J ' @<5' 5<<' A : 8 5' ><:' E ' 5<' B : <G' C : < $ 8><: 8' J 8' .7 B' B<@80' J 8' A<5' HE758' CCE D 5<F8B' 5<' 5 I7@A' >697@A' 68 G ' <?8 :' 5 ; 8' 2 ' $ $ $ ' <' F I8' ' 6<@A' 5<: 9' ; < : 50' >58 :' ' F < 5' B8 G8 : 58' @B' 8LC757@A' 5 : EAA680' @B' ' ; B' ' G78C8' <>' 7C8 J<: I' ' 75' 7 ' G< 7=68' 5<' 7F A7@80' J 8' 8F 8 : A8B' <@' 5<' 5 ; 8' EGG8 :' G6 58 E' <>' 5 ; 8' <6B7C ; 5' A6 C78 : $X

; 8' A67F G 8 ' J ; 7C ; ' ; B' =88@' C7>EA ; 5' <>' 5 ; 8' 6<J8 :' G :5' <>' 5 ; 8' < ; 67C ; 5' A6 C78 :' J8 : 8' B7 C<E : A7@A0' <' 75' J ' @<J' B858 : F7@8B' 5<' C : < ' <?8 :' 5 ; 8' : 7BA8' =85J88@' 75' @B' 5 ; 8' <5 ; ; <: @' A6 C78 : $; 7 ' J ' @<5' B<@8' J 75 ; <E5' A : 8 5' 5 : <E=68$ A 7@' J 8' : < 8' 5<' ' ; 87A ; 5' 8LC88B7@A' Q0 ' >885$?8@5E 669' J 8' 5<<I' 5<' 5 ; 8' 5 : C I' <>' 5 ; 8' B8 G7 8B' : 7>5!<C ; 0' @B' B8 C8@B8B' =9' 5 ; 8' J866 I@<J@0' =E5' : <EA ; 0' G $5 ; ' J ; 7C ; R68 B ' 5<' 5 ; 5' G ' : : 7?7@A' 5' 5 ; 8' <@58' < ' ; <586' 5' V8 : F 55' 5' 1$Q ' 6* *) 8' <CCEG78B' @8 : 69' 5J 86?8' ; <E : ' <>' C5E 6' J 6I7@A' 7@' C<F 7@A' >: <F' 5 ; 8' C ; 685' <@' 5 ; 8' : G75855 ' 6G' MJ ; 7C ; ' J ; <E : ' =<?8' V7@ 6N0' @B' J 8' C<@ 8HE8@569' ><E@B' 5 ; 5' 5 ; 8' <D : @7@A' G ' J ' @<5' 5 ; 8' ; <: 58 5' : <E58' >: <F' V7@ 6' 5<' V8 : F 550' 65 ; <EA ; ' 75' J ' 5 ; 8' F < 5' B7 : 8C5$

J<' B<S8@' AE7B8 K A<<B0' = B0' @B' 7@B7>>8 : 8@50' 4 : 8@C ; 0' J7 0' @B' 5 67 @ K C @' C<F F<@69' =8' 88@' 7557@A' <@' 5 ; 8' J 66' <@' 5 ; 8' >: <@5' <>' 5 ; 8' <@58' < ' ; <586[J 757@A' <@' 5 ; 87 :' 8F G6<98 : 0' @B' 6<<I7@A' ><:' 8F G6<98 : 0' J 5C ; 7@A' @8J' : : 7? 6 0$ @B' G8CE6 57@A' <@' 5 ; 8' @EF=8 :' <>' >: @C ' J ; 7C ; ' F 9' =8' 8L5 : C58B' >: <F' 5 ; 87 :' G<CI85 $; 8' 2 K <F857F8 ' 5 : @A869' @B' J<@B8 : >E669' B : 8 8B K 5 @B' =<E5' 7@' A : <EG 0' <:' 68 @' = CI' 7@' C ; 7 : 0' <:' 6<E@A8' <@' 5 ; 8' =8@C ; 8 ' J ; 7C ; ' :8' G6 C8B' =9' 5 ; 8' B<<:$; 89' J8 :' 8L5 : <:B7@ :9' =<<5 0' @B' 5766' F<:8' :8F :I =68' ; 8 B B : 8 8 $; 87 :' G8868B0' =67 58 : 8B0' @B' J<668@' > C8 ' :8' J<:5 ; ' 5EB97@A$ <F80' =9' 5 ; 8' 8L8 : C7 8' <>' J 5C ; D >E6@8 ' @B' E@ : 8F 7557@A' C :80' ; ?8' =88@' ><:5E@ 58' 8@<EA ; '5<' CHE7 : 8' ' >7@8' : J' 78@@ ' C<F G68L7<@$ E5' F < 5' <>' 5 ; 8F' ; ?8' @<5' =88@' <' ; GG9$; 89' ; ?8' =88@' C<:C ; 8B' <@' :<CI 0' @B' :< 58B' <@' A6 C78 : $; 87 :' C ; 88I K >7 : 5' GE>>8B0' 5 ; 8@' C : CI8B K ; ?8' 8LEB8B' '5E : G8@57@8

67I8$ F 558:0 J;7C;$ 67 $H<E: 8B0B<J@$ 5;87:$ > C8 0 @B$; $B:78B$ 7@$ $G 5C;8$ 67I8$ 5;8$:8 7@$ <@$ 5;8$ 5:E@I $<>$ G7@8 $;89$; ?8$:8F<?8B$ 750 @B$ 5$ 5;8$ F8$ 57F8$; ?8$ GE668B$ <>>$ 6 :A8$ >6 I8$ <>$ 5;87:$ I7@$" ; 9$; ?8"A<@8$ >:<F$ = B$ 5<$ J<: 8K"5;87:$ 8 8$; $ =8C<F8R ;<G8D 68 K I@7?8$ + B$ C7 <:$; ?8$ =88@$ C 668B$ 7@5<$ G6 90 58@B8:690 @B$ B 7@5769 0 5;89$; ?8$ 8@B8 ?<E:8B$ 5<$:8BEC8$ 5;87:$ C;88I$ 5<$ <@80 E@7><:F 07E8$ 5$ 7 "@<5$ 5<$ =8$ B<@8$ E5$ 5;89$; ?8$ A<@8$ <@0 > C7@ 58B0 @B$ 506 5 67 ?8$ =:<EA;5$ 5;87:$ E@; GG9$ C<E@58@ @C8$ 5<$ $ 5 58$ <>$;86G68 $ @B$ C<:!7G6858$:E7@$;87:$ 67G$:8$ C: CI8B0 $5;87:$ C;88I$:8$ J<668@0 5;87:$ 898$ $=6<<B ;<50 5;87:$ @< 8$:8$ G8868B$ @B$ 7@B8 C:7= =68$ $ 0 "7

EC;$:8$5;8$ G68 E:8$ <>$ 5;8$ F<E@5 7@88:$ C<:@>E669$ @B$ B8:7 7?869$ 5;8$ 6 5$ C<F8:$ C<FG :8$ 5;8$ 7A;5$ J75;$;7$ <J@$ >6 CC7B$ > C8$ @B$ B 7@59$; @B 0 E@C<@ C7<E$ 5; 5$;8$ 5 <0 G8:; G 0 J766 =8$ @EF=8:8B$ J75;$ 5;<8$ J;<F$;8$ @<J$:7B7CE68 $

;8:8$ 7$ $>: @I@8 $<>$ F @@8:$ =<E5$ 5;8 8$ 5: @A869 GG :8668B$ @B$ HE88: > C8B$ F8@0 J;7C;$ B<8$ @<5$:8F7@B$ <@8$ <>$ B: J7@A :<<F0 <:$ C759$ 67>8$! @B$ 75$ 7$ A<<B$ 5<$ 88K7@$ 5;7$ C6E= :<<F$ <>$ V8:F 55K$ 5;<8$ C<6B$ =<B78 0 <E:$ 5<< >:7A7B$ C<E@5:9F8@0 :8A868$ 5<A85;8:$ J;8@$ =:<EA;5$ 7@5<$ C<@5 C50 @B$ 75$ 7$ G68 @5$ 5<$ J75@8 $ 5;8$;8 :59$ J86C<F8$ A7?8@$ 5<$ 5;8$ @8J C<F8:$ =9$ 5;8$;<5$ @B$;7$ 8LC8668@5$ J>8$"++

$68>5$ 5;7$ A:88 =68$ <C7859$ 5<$ 88I$ 68558:$ 5$ 5;8$ G<5$;89$ 9786B8B$ B7 5:<E$ 7@58667A8@C8$ 9$;<67B 9$ J $ =:<EA;5$ 5<$ @$ =:EG5 58:F7@ 57<@0 @B$ $ J 758B$ 5;8$ ::7? 6$ <>$ U8766 9$ MJ;<$ $+ $ C<@?<97@A$ 5;8$ 5<:8$ ><:$ 5;8$ 55 CI$ <@$ 5;8$ 558:;<:@M <@69$ 5<$ 7@D ><:F$;7F$ 5;5$ 5$ <E:$ :: @A8F8@5$ J8:8$ EG 850 5;8@$ 5: ?8668B$;<F80 B 9$ @B$ @7A;50 > 5 $8LG:8$ 5: 7@$ J<E6B$ C ::9$ F8$

P$;7$ <GG<:5E@759$; $ =88@$ 5 I8@$ 5<$ 7@5:<BEC8$ 5<$ 5;8$:8 B8:$ <F8$ <>$ 5;8$ F< 5$ 8LG8:5$:; 58E:$ F<E@5 7@88:$ <>$ 5;8$ 57F8$ 0 @B0 $>8J$ <>$ 5;8$ AE7B8$ J;<$; ?8$ =88@0 <:$ J766 =80 F8@57<@8B$ 7@$ 5;8$ C<E: 8$ <>$ 5;8$ =<<I$

858:$ 8:F$ 7$ <@$ 5;8$ 8L5:8F8$ 57A;5$; 8@$ C<F8$ 9<E@A$ 858:$ EAJ" 6B8:$ MEG<@$ 5;8$ =8@C;N 0 @B$.$.$ HE7A@ S$ M68 @7@A$ A 7@ 5$ 5;8$ B<<: G< 5N$ 4: @S$ @B8:$ F 55<@$ <CCEG78$ 5;8$ 58G 0 @B$ /6:7C;$ E8@8:$ 5<J8:$ 7@$ 5;+$ = CIA:<E@B$

THE CLUB-ROOM OF ZERMATT, IN 1864.

6<@8 J75;<E5 C<@ 7B8:7@A ;<J'75 J ' CC<FG67 ;8B$) ;76 50 J;8@ F8@ > 760 J8 7@HE7:8 J;9'5;89 ; ?8 @<5 ECC88B8B$ <' > 76E:8 ' :8 <>58@57F8 ' F<:8 7@ 5:EC57?8'5; @' ECC8 8 0 @B 5;8'B7 GG<7@5D F8@5 ' <>' <F8 =8C<F8 G:<>75 =68'5<' <5;8: $

/G 5<' C8:5 7@ G<7@50 5;8 G:<A: FF8 J ' C<FG685869 @B ; GG769 C ::78B <E5$ %<5;7@A =E5 ECC8 ' 558@B8B <E:'8>><:5 ' <' 6<@A ' 5;8 8LCE: 7<@ ' J8:8 8L8CE58B ' 5;89 ; B =88@ G6 @@8B$ <5 <>' 5;8F' J8:8 F B8 EG<@ 5;8 ?8:9 B 9 ' J;7C;' ; B =88@ >7L8B ><:'5;8F' F<@5; ' =8><:8; @B0 @B 66 J8:8 CC<FG67 ;8B0 C<FG : 57?869 G8 I7@A0 <' 8 7690 5; 5'5;87:' B8 C:7G57<@ ' FE 5'=80 7@ 5;8 = 8@C8 <>' B7>>7CE659 @B B @A8:0 68 ' 7@58:8 57@A 5<' 5;8 A8@8: 6 :8 B8:' 5; @' 5;89 J<E6B ; ?8 =88@7>' <E:'C<E: 8 ; B=88@ F :I8B=9'=6E@B8: ' @B J @5 <>' !EBAF8@5$ R 8><:8 G:<C88B7@A 5< G8 I' <>' 5;8 8 8LCE: 7<@ 0 75 J766 @<5 =8 8@57:869 E 868 ' 5<' 8LG6 7@ 5;8 :8 <@ ' J;7C;' 7@>6E8@C8B 5;8 868C57<@ <>' 5;8 :<E58 ' J;7C;' J8:8 B<G58B EG<@ 5;8F$ e

@' 5;8 C<E: 8 <>' 5;8 G 5 >7?8 8 <@ ' F9 8 :69 G: C57C8 ' J8:8 :8?<6E57<@7 8B$ 9 @57G 5;9 5<' @<J' J ' <?8:C<F80 @B F9 G:8D B768C57<@ ><:' :<CI ' J ' F<B7>78B$ BC8 66 5;<8 J;<' :8 @<5 F<E@5 7@88: ' =<:@0 ' J 0 5 5;8 >7: 50 8L5:8F869 @8:?<E ' EG<@ 588G @<J$;8 @<J' 88F8B' =<E@B 5<' 67G0 @B /' 5;<8 J;<' J8:8 EG<@ 75 5<' A< 6<@A J75;'75$ @<J' <>' C8:5 7@ HE 6759 7 ' E@B<E=58B69 67 =68'5<' 67G J;8@75 7 ' 5 ' C8:5 7@ 7@C67@ 57<@$P ;8 8L C5 5 58 ' J;7C;' :8 B @A8:<E 0 <:' >80 75 7 ' @<5 G< 7=68 5<' B8 C:7=8 7@' J:757@A$; 5 7 ' <@69 68 :@5 =9 8LG8:78@C80 @B C<@D >7B8@C8 EG<@ @<J'7 '@<5:8 669 >865 E@576 <@8 ; 'A 7@8B 8LG8:78@C8$ <@>7B8@C8+ BE /9 C F8 5<' F80 @B ' 75 C F8 <' B7B F9 G :D 57 6759 ><:' :<CI ' B7F7@7 ;$ 4<:'75 J ' 8?7B8@50 5<' E 8 ' C<FF<@' 8LG:8 7<@0 5; 5 75 G 7B =8558:' 5<' 5: ?86 EG<@ @<J' 5; @ EG<@ :<CI $;7 ' GG;8 ' 5<' @<J =8B ' GE:8 @B 7FG680 <:' 5<' @<J' J;7C;' 7 ' 697@A <?8:' A6 C78:0 @B 7@' 5;8 868C57<@ <>' :<E58 ' 75 ; 0 6 558:690 6J 9 ' =88@F9 G: C57C8 5<' 6<<I'><:'5;8 G6 C8 ' J;8:8 @<J' 6<G8 0 <:' @<J C<?8:8B A6 C78: 0 :8 C;' ;7A;8 5 7@5<' F<E@5 7@ $ >'

5' 7 ' C< F G : 57?869' 86B< F0 ; < J 8?8: 0 5 ; 5' @' C8@5' <>' ' A: 8 5' F<E@5 7@' C @' =8' 8L8CE58B' 8LC6E 7?869' EG<@' @< J' @B' A6 C78: $ 7BA8 ' G88G' 5 ; : <EA ;' J ; 7C ;' ; ?8' 5<' =8' E: F<E@58B$ @' F 9' 8 :678:' C: F=67@A ' ' E E 9' 5<< I' 5<0 <:' J ' 5 I8@' EG<@0 5 ; 8' E F F 75 ' M<:' :A58 N' <>' 5 ; 8' :7BA8 0 @B' ' A<<B' F @9' F<E@5 7@88: ' ; =75E 669' 5 I8' 5<' 5 ; 8 F' <@' G:7@C7G680 ' 5 ; 8' @ 5E: 6' @B' G: <G8:' J 9$ CC<: BD 7@A' 5<' F 9' 8LG8: 78@C80 75' 7 ' 86B< F' J 866' 5<' B<' <' J ; 8@' @9' <5 ; 8:' C<E: 8' 7 ' <G8@$ ' ' ; ?8' 6: 8 B9' 7B0 @B' G: 8 8@569' ; 66' : 8G8 5' F<: 8' G :57CE6 :690 5 ; 8' C: 8 5 ' <>' 66' 5 ; 8' F 7@' :7BA8 ' <>' 5 ; 8' A: 8 5' G8 I ' <>' 5 ; 8' 6G ' :8' ; 558: 8B' @B' C68>5' =9' >: < 50 @B' 75' @<5' E@ ' >: 8HE8@569' ; GG8@ ' 5 ; 5' ' @<5C ;' 7@' ' :7BA80 J ; 7C ;' GG8 : ' G8: >8C569' 7@ 7A@7>7C @5' >: <F' ' B7 5 @C80 7 ' >< E@B' 5<' =8' @' 7@ EG8: =68' ; : :78:' 5<' >E: 5 ; 8:' G: <A7 8 0 @B' ' A: 8 5' B85<E: 0 <:' ' 6<@A' B8 C8@50 ; ' 5<' =8' F B8' 5<' ?<7B' 5 ; 8' <= 5 C68$) ; 8@' C< F F 7558B' 5<' @' : 858' <@8' 7 ' 578B0 6 F < 5' 6J 9 0 5<' ' G :57CE6 :' C<E: 80 >: <F' J ; 7C ;' 75' 7 ' B7>>7D CE65' 5<' B8?7 58$ EC ;' 6< ' <>' 57 F 8' F E 5+: 8 E65' 7>' @9' 8:7<E ' <= 5: EC57<@' <CCE: 0 @B' 5<5 6' B8>8 5' 7 ' @<5' 5' /' 7 F G: <= =68$

E5' 75' 86B< F' ; GG8@ ' 5 ; 5' ' A: 8 5' 6G7@8' G8 I' 7 ' 88@' 5 ; 5' 7 ' CE5' <>>' =: EG569 0 7@' 66' B7: 8C57<@ 0 >: <F' 5 ; 8' @< J ' @B' A6 C78: ' J ; 7C ;' E: : <E@B' 75$ @' 75 ' AE6678 ' @< J' J7 / ' C67@A0 65 ; <EA ;' 75 '> C8 ' F 9' =8' 5<<' 588G' >< :' 5 ; 8' >< : F 57<@' <>' G8: F @8@5' @< J =8B $; 8' F8: 75 ' <>' 5 ; 8 8' @< J AE6678 ' M<:' 2 0 ; ?8' =88@' 6: 8 B9' G<7@58B' <E50P' @B' 75' 7 ' ; : B69' @8C8 : 9' 5<' <= 8: ?80 >58:' 5 ; 5' J ; 7C ;' J ' !E 5' @< J' 7B' =<E5' @< J0 5 ; 5' C8@5 ' <>' @< J AE6678 ' M J75 ;' G: <G8:' G: 8D C E57<@ N' :8' ?8: 9' F EC ;' 5<' =8' G: 8>8: : 8B' 5<' C8@5 ' <>' : <C I9' : 658 $

9' ><66< J 7@A' 5 ; 8' A6 C78: 0 5 ; 8' @< J 6<G8 ' =<?80 @B' 5 ; 8' C<E6<7: ' : 7 7@A' <E5' <>' 5 ; 8 F0 75' 7 ' E E 669' G< 7=68' 5<' A8+5 ?8: 9' C6< 8' 5<' 5 ; 8' E F F 75 ' <>' 5 ; 8' A7B 5' G8 I ' 7@' 5 ; 8' 6G $; 8' >7@ 6 C67 F =' J 760 0 G8: ; G 0 @8C8 : 769' =8' =9' @' :+58$; 8' 68 ' <>' 75' 5 ; 8' =8558: $

5' <CC 7<@ 669' <CCE: ' 5 ; 5' C<@ 7B8: =68' F<E@5 7@' 6<G8 0 <:' > C8 0 :8' B8 575E58' <>' @< J AE6678 $ @' 5 ; 5' C 8' 75' J 60 ?8: 9' 67 I869 0 =8' =8 5' 5<' B ; 8: 8' 5<' 5 ; 8' > C8 ' M<:' 5<' 5 ; 8' AE6 ; 8 ' <:' F7@<:' :7BA8 ' EG<@' 5 ; 8 F N' : 5 ; 8:' 5 ; @' 5 I8' 5<' 5 ; 8' A: 8 5' :7BA8 $ / G<@'

) %&)' ( ) ' *&' %+) 6# 7 *

> C8$ <@8$ C @$ F<?8$ 5<$ 5;8$:7A;5$ <:$ 5<$ 5;8$ 68>5$ J75;$ F<:8$ > C76759$ 5; @$ EG<@$ 5;8$ C:8 5$ <>$ ' :7BA8$ 0 @B$ J;8@$ ' B7>>7CE659$ 7 ' ::7?8B$ 50$ 75$ 7 0$ C<@ 8HE8@5690$ 68 ' 5:<E=68 <F8$ 5<$ C7:CE F?8@5$

@$ 868C57@A$ 5;8$:<E58 ' J;7C;$ J8:8$ 5 I8@$ 7@$ 0$ ' 6<<I8B0$ >7: 50$ ><:$ G6 C8 ' J;8:8$ A6 C78: ' @B$ @<J$ 8L58@B8B$;7A;8 5$ EG$ 7@5<$ 5;8$ F<E@5 7@ ' J;7C;$ J8:8$ 5<$;8$ C8@B8B0$ <:$ 5;8$:7BA8 ' J;7C;$ J8:8$ 5<$;8$ C:< 8B$ 8L50$ ><:$ AE6678 ' >7668B$ J75;$ @<J$ 68 B7@A$ 57/' ;7A;8:0 @B$ >7@ 6690$ >:<F$ 5;8$;8 B ' <>$ 5;8$ AE6678 ' J8$ C<FG6858B$ 5;8$ C8@5 0$ J;8@8?8:$ 75$ J ' G: C57C =680$;9$ > C8 ' 7@ 58 B$ <>$ =9$:d58 $;8$ C8@5$ <>$ 5;8$ &: @B$ <:@78:$ M 0 QQN0$ <>$ 5;8$ ' 8@5$ 6 @C;8$ M 20 N0$ &: @B8 ' .<: 8 ' M 01 N0$ 7AE6668$ (8:58$ M 0 2 N0$ E7 ' @8558$ M Q01Q1N0$ @B$ 5;8$ 558:;<:@$ M 201 N0$ J8:8$ 66$ CC<FG67 ;8B$ 7@$ 5;7 ' J 90$ =8 7B8 ' 5;8$ <5;8:$ 8LCE: 7<@ ' J;7C;$ J766$ =8$:8>8::8B$ 5<$ =9$ @B$ =9$;8$:<E58$ 868C58B0$ =8><:8$ 5;8$ 5 :5$ J ' F B80$ J ' 7@$ 8?8:9$ C 8$ 5:7C569$ ><66<J8B$ <E5$

) 8$ 7@ G8C58B$ 66$ <>$ 5;8 8$ F<E@5 7@ ' >:<F$ @87A;=<E:7@A$;87A;5 ' =8><:8$ 8@58:7@A$ EG<@$ 5;87:$ C8@5 $ ' 8LG6 7@8B$ 5<$ 5;8$ AE7B8 ' 5;8$:<E58 ' ' G:<G< 8B$ 5<$ =8$ 5 I8@0$ @B$ MJ;8@$ 5;8$ C<E: 8 ' J8:8$ 5$ 66$ C<FG67C 58BN$ I85C;8B$ 5;8F$ <E5$ <@$ G G8:$ 5<$ G:8?8@5$ F7 E@B8:D 5 @B7@A$ @$ <F8$ >8J$ C 8 ' 5;89$ EAA8 58B$? :7 57<@ 0$ @B$ 7@$ 8?8:9$ C 8$ 5;8$:<E58$ J ' J866$ B7 CE 8B$;8$ 6. 2 ' <>$ 5;8$ J<:I' J ' B<@8$ =9$ 5;8$ AE7B8 0$ @B$ ' 86B<F$ 7@58:>8:8B$ J75;0$ <:$ 558FG58B$ 5<$ 7 5$ 7@$ 75$

;8$ 5;$ <>$ .E@8$ ' ' G8@5$ 7@$ 5;8$? 6689$ <>$ E58:=:E@@8@$ J75;$ 5;8$ 8?$) $ $ J I8:$ @B$ 5;8$ AE7B8 ' ;:7 57 @$ @B$ /6:7C;$ E8@8:0 @B$ <@$ 5;8$ 25;$ C:< 8B$ 5;8$ 858: A: 5$ J75;$;:7 57 @$ 7F8:$ @B$.<; @@$ @@68:$ 5<$ E:5F @$ M <E:58F A@8N$ 7@$ 5;8$ (6 7 $ @@68:$ J ' 5;8@$ G 7B$ <>7N ' 7C;86$:<S$ @B$: @S$ 78@8:$ J8:8$ J 757@A$ F8$

5$ J ' @<5$ G< 7=68$ 5<$ >7@B$ 5J<$ 68 B7@A$ AE7B8 ' J;<$ J<:I8B$ 5<A85;8:$ F<:8$; :F<@7<E 695; @$:<S$ @B$ 7F8:$ 78@8:R' G :5$ J ' E=<:B7@ 58$ 5<$ 5;87:0$ @B$;8$ J ' BB8B$ ' ' C<@?8@78@C8$: 5;8:$ 5; @$ ' ' @8C8 759$:<S$ G<I8$ 4:8@C;$ 6<@80$ 6F+:$ 675568$ 86 8$ 5; @$ &8:F @$ 78@8:$ $ G<I8$ =<5;$ 6 @AE A8 0$ @B$ J ' E 8>E6$ <@

5; 5 CC<E@50 =E5 ;8 86B<F J8@5 5< 5;8 >:<@50 8LC8G57@A BE:7@A 5;8 8 :69 G :5 <> 5;8 B 90 J;8@ 5;8 J<:I J 8 90 @B ;8 C58B 5;:<EA;<E5 F<:8 G<:58:5; @ $AE7B8$

;8 7FG<:5 @C8 <> ; ?7@A :8 8:?8 <> G<J8:<@ F<E@5 7@ 8LG8B757<@ C @@<5 ;8 5<< 5:<@A69 7@ 7 58B EG<@$) 8 6J 9 ; B <F8 7@ ; @B0 @B J8:8 @8?8:G:8 8B0 <: <?8:J<:I8B0 < 6<@A J8 J8:8 5<A85;8:$ <F8 J; 5 F7A;50 J8 J8:8 :8 B9 ><: 75$ E5 =9 8:78 <> C; @C8 0 J;7C;; ; 66 @8?8: C8 8 5< :8A:850 J >7: 5 <=67A8B 5< G :5 J75;: <S0 @B 5;8@ 5< B7 F7 5;8 <5;8: 0P @B <0 B8?7 57@A >:<F 5;8 C<E: 8 5; 5 ; B B867=8: 5869 B<G58B0 J;7C;J ECC8 >E6 7@G: C57C8 =8C E 8 75 J <E@B 7@G:7@C7G680 =8C F8 ><:5E75<E 69 F8F=8: <> @ 8LG8B757<@ 5; 5 8@B8B J75;: 5;8 C 5 5:<G;8 J;7C;=:7@A 5;7 =<<I0 @B =:<EA;5 F9 C: F=68 F<@A 5 5;8 6G 0 5< C6< 8$7Y

P 88 ; G58: LL$

_ 8@A A8B :<S ><: =8><:8 G :58B >:<F;7F 7@ 2 0 =E5 EG<@ J :757@A 5< ;7F 7@ 5;8 F <@5;' <> G:76 5< >7L 5;8 B 58 ' <> ;7 8@A A8F8@50 ><E@B 5; 5 ;8 = B EGG< 8B;8 J >:88 M7@ C<@ 8HE8@C8 <> @<5 ; #B@A ;8 :B >:<F F8 8 :678:N0 @B ; B 8@A A8B ;7F 86>5< : $ >:<F 5;8 Q15;<> .E@8$ 8@B8 ?<E:8B 5< ;<6B ;7F 5< ;7 G:<F7 80 =E5 ;8 C<@ 7B8:8B ;7F 86> E@ =68 5< J75;B: J >:<F ;7 6 58:<=67A D 57<@$ 7 68558: J8:8 ;<@<E: =68 5< ;7F $;8 ><66<J7@A 8L5: C5 >:<F 5;8 6 5 <@8 ;8 J:<58 5< F8 7 A7?8@ @ 7@58:8 57@A <E?8@7: <> =: ?8 @B EG:7A;5 F @ [K]

E .E@8 ' J8 J8@5 >:<F 7E5F @ 5 VRF87.8@ @B 5;8@C8 <?8:5;8 4<:C6855 'G '5 V7@ 6$) 8 B7?8:A8B >:<F 5;8 EFF75 <> 5;8 G 'EG <F8@87A;;<E:7@A ;87A;5'5 7@ G8C5 5;8 &: @B <:@78: @B ' B8C7B8B 5 ; ?8 @<5;7@A 5 B J75;' 75 ' @<:5;8:@ 7B8$;8 F<E@5 7@ J ' F<:85; @ 8?8@ F768 '\J 9 ;E5 75 J ' HE758 >8 5 G:<@<E@C8 75 7@ CC8 7=68 >:<F <E: B7:8C57<@$

@ 5;8 5;'L?8 68>5 V7@ 6 5 Q$ ' $ $; ?7@A =88@ ><: ' F<F8@5 A:8 569 E:G:7 8B =9 @ 8@5:9 7@ 5;8 ;<586 =<<I0P @B C8@B7@A =9 5;8 V7@ 6 A6 C78:0 @B A7?7@A 5;8 = 8 <> <E: F<E@5 7@ ' J7B8 =8:5;' 7@ <:B8:5; 5 75 F7A;5 5;8 =8558: =8 8L F7@8B0 G 8B A: BE 669 :7A;5 :<E@B 5 75 ' <E5;0 =8><:8 ' J 9 EG 75 J ' 8877$> 5 $ ' J8 ::7?8B EG<@5;8 G6 58 E <> 5;8 A6 C78:5; 5 B8 C8@B ' 5<J :B ' 5;8 8 50 =85J88@ 5;8 &: @B <:@78: @B 5;8 '8@5 6 @C;80 @B >:<F 5;7 ' G6 C8 ' :<E58 J ' :8 B769 5: C8B$) 8 588:8B 5 5;8 @<:5;' M ' ;<J@ EG<@5;8 F GN $ &' 5;8 A6 C78:0 5<L? :B ' 5;8 :7BA8 5; 5 B8 C8@B ' 5<5;8 8 50 A 7@8B 75 =9 F<E@57@A @<L? 6<G8 0 @B ><66<J8B 75 5 5;8 EFF750 L?;7C;' J ' ::7?8B 5 =8><:8 ; 6> G 5 5J86?8$ 4:<F >7: 5 5 6 5 5;8 :<E58 J ' 6F< 5 8@57:869 <?8: @<J$

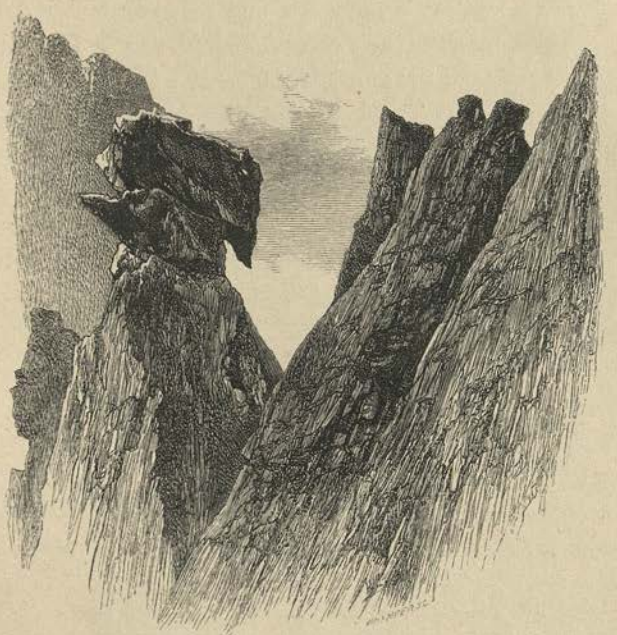
;8 :7BA8 ' 68 B7@A 5 5;8 @<:5;' @B 5 5;8 <E5;' >:<F 5;8 EFF75 <> 5;8 &: @B <:@78:0 8L;7=758B 7@ ' F< 5 5:7I7@A F @@8: 5;8 8L5: <:B7@ :9 8>>8C5 ' 5; 5 F 9 =8 G:<BEC8B =9 ?7<68@5 658:D @ 57<@ ' <> ;8 5 @B C<6B$;8 <E5;8:@ <@8 J ' ; CI8B @B G675 7@5 5;8 J76B8 5 ><: F 0 @B 5;8 @<:5;8:@ <@8 J ' @<5 68 ' C68>5 @B 7FG: C57C =680 @B <>>8:8B 5;8 B:<66 G78C8 <> :<CI C :?7@A J;7C;'7 ' :8G:8 8@58B EG<@G A8 NJU ' <F8 F 66 =6<CI ' A0C5E 669

P 5 J ' @ 8@5:9 B8 C:7=7@A @ C8@5 <> 5;8 &: @B <:@78: MJ;7C;' J8 EGG< 8B ; B @8?8:' =88@ C8@B8BM >:<F 5;8 ?8:9 B7:8C57<@ J;7C;' J8 ; B !E 5 G:<@<E@C8B 5<' =8 ;<G868 ' ' 5 J ' 8 G8C7 669 5 :567@A0 =8C E 8 4: @S 78@8:' J ' G<I8@' <> 7@ 75 ' ; ?7@A =88@' C<@C8:@8B7@ 5;8 C8@5$ @ 8L F7@7@A 78@8:' 75 J ' ><E@B 5; 5 ;8 ; B F B8 5;8 8LCE: 7<@0 @B ; B EGG< 8B 5 5;8 57F8 ;8 J ' EG<@ ;7 ' E F F 75 5; 5 75 J '5;8 &: @B <:@78:$ 8 J ' >58:J :B ' 5; 5 5;89 ; B <@69 C8@B8B <@8 <> 5;8 8?8: 6 G<7@5 'EG<@ 5;8 :7BA8 :E@@7@A @<:5;J :B ' >:<F 5;8 &: @B <:@78: K ' =8678?80 5;8 7A@8 B8 R 6688 M 0 '>885N

Y 4<:' :<E580 88 5;8 F G <>5;8 (6689 <> V8:F 55$

tottered and fell before our eyes, and, starting others in their downward course, grew into a perfect avalanche, which descended with a solemn roar on to the glaciers beneath.

It is natural that the great ridges should present the wildest forms—not on account of their dimensions, but by reason of their

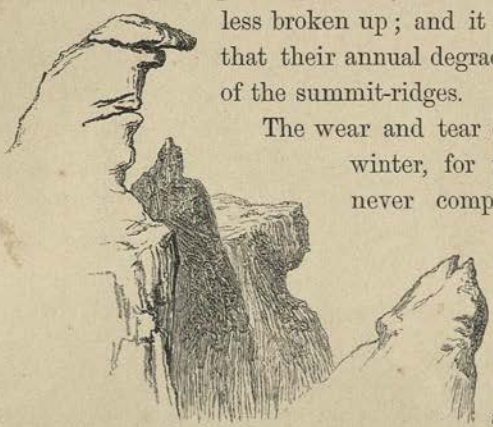


PART OF THE SOUTHERN RIDGE OF THE GRAND CORNIER.

positions. They are exposed to the fiercest heat of the sun, and are seldom in shadow as long as it is above the horizon. They are entirely unprotected, and are attacked by the strongest blasts and by the most intense cold. The most durable rocks are not proof against such assaults. These grand, apparently solid—eternal—mountains, seeming so firm, so immutable, are yet ever changing and crumbling into dust. These shattered ridges are evidence of their sufferings. Let me repeat that every principal ridge of every

great peak in the Alps amongst those I have seen has been shattered in this way; and that every summit, amongst the rock-summits upon which I have stood, has been nothing but a piled-up heap of fragments.

The minor ridges do not usually present such extraordinary forms as the principal ones. They are less exposed, and they are less broken up; and it is reasonable to assume that their annual degradation is less than that of the summit-ridges.



PART OF THE NORTHERN RIDGE OF THE GRAND CORNIER.

The wear and tear does not cease even in winter, for these great ridges are never completely covered up by snow,* and the sun has still power. The destruction is incessant, and increases as time goes on; for the greater the surfaces which are exposed to the practically inexhaustible powers of sun and frost, the greater ruin will be effected.

The rock-falls which are continually occurring upon all rock

* I wrote in the *Athenæum*, August 29, 1863, to the same effect. "This action of the frost does not cease in winter, inasmuch as it is impossible for the Matterhorn to be entirely covered by snow. Less precipitous mountains may be entirely covered up during winter, and if they do not then actually gain height, the wear and tear is, at least, suspended. . . . We arrive, therefore, at the conclusion that, although such snow-peaks as Mont Blanc *may* in the course of ages grow higher, the Matterhorn must decrease in height." These remarks have received confirmation.

The men who were left by M. Dollfus-Ausset in his observatory upon the summit of the Col Theodule, during the winter of 1865, remarked that the snow was partially melted upon the rocks in their vicinity upon 19th, 20th, 21st, 22d, 23d, 26th, 27th December of that year, and upon the 22d of December they entered in their Journal, "*Nous avons vu au Matterhorn que la neige se fondait sur roches et qu'il s'en écoulait de l'eau.*"—*Matériaux pour l'étude des Glaciers*, vol. viii. part i. p. 246, 1868; and vol. viii. part ii. p. 77, 1869.

F<E@5 7@ ' M EC;' ' :8$:8>8::8B$ 5<$ EG<@$ GG$ Q0 Q N$:80 <>$ C<E: 80 C E 8B$ =9$ 5;8 8$ G<J8: $; <$<@8$ B<E=5 '7 5 0 =E5$ <@8$ @8?8:$ =8678?8 ' 75$ <$ 5;<:<EA;69$ ' J;8@$ 5;8$ HE ::78 ' :8$ 88@$ >:<F$ J;7C;' 5;87:' F 58:7 6 ' ; ?8$ =88@$;8 J @C @B$ J;8@$ 5;8$ A8:F 0 <$ 5<$ G8 I0 <>$ 5;8 8$? 6 @C;8 ' ; ?8$ =88@$ 88@$ C5E 669$ 5 :57@A$ >:<F$ =<?8$

;8 8$ > 66 ' <>$:<<I$ 5 I8$ G6 C8$ >:<F$ 5J<$ C E 8 $ 47: 50 >:<F$ 5;8$;8 5$ <>$ 5;8$ E@$ B85 C;7@A$ F 66$ 5<@8 ' <:$:<CI ' J;7C;' ; ?8$ =88@$ ::8 58B$ <@$ 68BA8 ' <:$ 6<G8 ' @B$ =<E@B$ 5<A85;8:$ =9$ @<J$ <:$ 7C8$ ' ; ?8$ 88@ EC;$:868 8B$ F @9$ 57F8 ' J;8@$ 5;8$ E@$; ' :7 8@$;7A;0 > 66$ A8@569$ 5$ >7: 50 A 5;8:$ 5:8@A5;0 A:<J$ 7@$?<6EF80 @B$ 5$ 6 5$:E ;' B<J@$ J75;' ' C6<EB$ 5: 767@A$ =8;7@B0 67I8$ 5;8$ BE 5$ >58:$ @$ 8LG:8 ' 5: 7H$ 8C<@B690 >:<F$ 5;8$ >:88S7@A$ <>$ 5;8$ J 58:$ J;7C;' 5:7CI68 0 BE:7@A$ 5;8$ B 90 7@5<$ 5;8$ C68>5 0 >7 E:8 0 @B$ C: @@78 $;7 ' A8@C9$ 7 ' @ 5E: 669$ F< 5$ C57?8$ 7@$ 5;8$ @7A;50 @B$ 5;8@0 <:$ BE:7@A$?8:9$ C<6B$ J8 5;8:0 5;8$ A:8 58 5$ > 66 ' 5 I8$ G6 C8$P

);8@$ <@8$; ' C<@57@E 669$ 88@$ @B$;8 :B$ 5;8 8$ > 66 0 75$ 7 ' 8 769$ E@B8: 5<<B$ J;9$ 5;8$ A6 C78: ' :8$ 6 B8@$ J75;' F<: 7@8 $;8$ J<@B8:$ 7 0 @<5$ 5; 5$ 5;89$:8$ <F857F8 ' <$ A:8 50 =E5$ 5; 5$ 5;89$:8$ @<5$ 6J 9 ' A:8 58:$ ::8 G8C57?8$ <>$ 675;<6<A7C 6$ C<@ 7B8: 57<@ 0 <@8$ I@<J ' 5; 5$ 5;7 ' BC7=:7 ' C @@<5$; ?8$ =88@$ 8LC ? 58B$ =9$ 5;8$ A6 C+: $;8$ F<: 7@8 ' :8$ $ '=9$ A6 C78: 0 =E5$ 5;89$:8$ $ '>:<F$ 5;8$:7BA8 $;89$:8$ A8@8: 58B$ =9$ 5;8$ E@0 @B$ B867?8:8B$ =9$ 5;8$ >:< 5$ Z47:803 75$ 7 ' J866 7B$ 7@$ 6E5 :C;R' 67>8$ <>$ F7/E 0 Z7 ' 5;8$ F< 5$ C57?8$ 5677 A$ 7@$ @ 5E:80 @B$ 66$ A8@8: 57<@$ 7 ' F<57<@0 <:$ 5'68 50 J75;' F<57<@0 66$ <5;8:$ G :5 ' <>$ F 558:$ J75;<E5$ J :F5;$ 678$ 6EAA7 ;' @B$ B8 B0 @B$ C: ?8$ 5;8$ 7@>6E8@C8$ <>$;8 5$ ' 5;87:$ 67>80 @B$ J;8@$ 5; 5$ C<F8 ' EG<@$ 5;8F0 5;89$ 7F F8B7 5869$ CHE7:8$ <F8$ C57?8$ <:$ G 7?8$ $HE 67578 $3

P 6E$ 8 C;$ <>$ 5;8$ 8?8@$ @7A;5 ' ' G 8B$ EG<@$ 5;8$ <E5; J8 5$:7BA8$ <>$ 5;8$ 558:D ;<:@7@$ ' M 5$;87A;5 ' ? :97@A$ >:<F$ 0 22$ 5<$ Q0 Q$ >885 =<?8$ 5;8$ 68?86$ <>$ 5;8$ 8 N0 5;8$:<CI ' >866 7@C8 @569$ 7@$;<J8: ' @B$? 6 @C;8 $ 88$ G$ 1 $

5$ <@ <@R$ B$ <>$ 1 $ C<@$ F 9$; ?8R; B$ 5;7 ' G A8$ 7@$ F7@B$ J;8@$;8 J:<58 0 Z 5$ F E 5$ @<5$;8$ 5;<EA;5$ 5; 5$;8 5$ A8@8: 58 ' F<57<@0 <:$ F<57<@$;8 5$ M5;<EA;$ 7@$ <F8$:8 G8C5 '5;7 ' ;8$ 5:E8N0 ;E5$ 5; 5$ 5;8$?8:9$ 8 8@C8$ <>$;8 50 <:$ 5;8$ @; 5 G57 6 86>$ <>$;8 50 7 ' F<57<@$ @B$ @<5;7@A$ 86 8$3K 2 ' ' 2 ' ;<<I$ 77$ '8?89R' : @ 6 57<@$

>'5;8' 6G ' J8:8'A: @58B' 'G8:>8C569'7@? :7 =68' 58FG8: 5E:8 0'7>' 5;89' J8:8'@<' 6<@A8:' E=!8C58B0' 658:@ 5869 0'5<' >:88S7@A' =6 5 ' @B' 5<' C<:C;7@A' =8 50' 5;89' F7A;5' F<:8'C<::8C569'=8' 58: F8B' "858:@ 6$R ;89' F7A;5' 5766' C<@57@E8' 5<' B8C 90' =E5'5;87:' = 8F8@5' J<E6B' =8' FEC;'68 ' : G7B$

);8@':<CI ' :8'C<?8:8B'EG'=9' ';885'<>'A6 C78:'5;89'B<'8@!<9' @' 6F< 5'7@? :7 =68' 58FG8: 5E:8$;8' 8L5:8F8 ' <>' EF F8:' @B' J7@58:' :8'E@I@<J@'5<' :<CI ' J;7C;' :8' <' C<?8:8B'EG0 K ' : @A8'<>' $ '?8:9'>8J'B8A:88 '7 '5;8'F< 5'5; 5'7 'G< 7=68'E@B8:@8 5;'5;8'7C8$P' ;8:8'7 0' $ '675568':<:'@<' B7 7@58A: 57<@' >:<F' E@8HE 6' 8LG @ 7<@' @B'C<@5: C57<@$ 4:< 50' $ 'B<8 '@<5'G8@85: 58'7@5<' 5;8';8 :5'<> 5;8':<CI0' @B'C68 ?8'<>'? 5' F 8 $;8':<CI 0' $ ' E 5 7@' A:7@B7@A'7@ 58 B'<>'C68 ?7@A$ 5<F 0' $ 'C<F8' J 9'7@ 58 B'<>' F 8 $ 47 E:8 ' @B'<?8:; @A7@A' E:> C8 ' :8'=:7BA8B0'><:'5;8'7C8' C @@<5'A85' 5'5;8F'0!' @B' >58:' F @9'C8@5E:78 ' <>' A:7@B7@A' ; ?8' =88@' E 5 7@8B0' J8' 5766' >7@B' @EF=8:68 ' @AE6 :' E:> C8 ' M7@'5;8' =D! 0' J;7C;'J8:8'> ;7<@8B'=8><:8'5;8'7C8'=8A @'5<' J<:I$

;8' G<7@5 ' <>' B7>>8:8@C8' J;7C;' :8' <' 8?7B8@5' =85J88@' 5;8' <G8: 57<@ ' <>';8 50' C<6B0' @B' J 58:0' @B'5;8' C57<@'<>'A6 C78: ' EG<@' :<CI 0' :8' '><66<J$;8'><:F8:'5 I8' B? @5 A8'<>'C: CI 0'>7 E:8 0' !<7@5 0' @B' <>5'G6 C8 '0 5;8'6 558:' B<8 ' @<5$;8'><:F8:' C @' J<:I' 2 $' <?8:; @A7@A' F 8 '0 $5;8' 6 558:' C @@<5$;8' 8>>8C5 ' G:<BEC8B'=9'5;8'><:F8:'C<@57@E 669'7@C:8 80' =8C E 8'5;89'C<@57@ED 669'8LG< 8'>:8 ;' E:> C8 '=9'><:F7@A'@8J'C: CI 0'>7 E:8 0' @B' ;<68 $;8'8>>8C5 ' J;7C;'5;8'6 558:' G:<BEC8 ' C<@ 5 @569'B7F7@7 ;0' =8C E 8' 5;8' :8 '<>'5;8' E:> C8 '<G8: 58B'EG<@'=8C<F8 '68 ' @B'68 0' '5;89' =8C<F8' F<<5;8:' @B'>6 558:$

);5'C @'<@8'C<@C6EB80'5;8@0'=E5'5; 5' E@0'>:< 50' @B'J 58:0';?8

P' '<E=568 0' ' $ ' '<>'A6 C78: =8B 0'5;8': @A8'<>'58FG8: 5E:8'7 'A:8 58:$ E5' 5;8:8'7 '8?7B8@C8'5; 5'5;8'J7@58:'C<6B'B<8 '@<5'G8@85: 58'5<'5;8'7@@87F7< 5'8C8 8 '<>' A6 C78: =8B '7@'5;8'> C5'5; 5' 5:8 F 'C<@57@E8'5<'>6<J'E@B8:@8 5;'5;8'7C8' 66'5;8'98 :' :<E@B0'J7@58:' 'J866' ' EF F8:0'7@'5;8' 6G ' @B' M ' J '7@><:F8B'7@'&:88@6 @BM'7@' &:88@6 @B$' LG8:7F8@5 0'G:<<>'C @'=8':8 B769'<=5 7@8B'5; 5'8?8@'7@'F7B EF F8:'5;8' =<55<F'58FG8: 5E:8'7 'C6< 8'5<' Q" 4 ;5$

5' 88'GG$ 2 $

; B 7@>7@75869 F<:8 5< B< 5; @ A6 C78: J75; 5;8 > ;7<@7@A <> F<E@5 7@ ><:F @B? 6689 6<G8 ^) ;< C @ :8>E 8 5< =8678?8 5; 5 G<J8: J;7C; :8 5 J<:I 8?8:9J;8:8 J677C; ; ?8 =88@ 5 J<:I 6J 9 J;7C; :8 < 7@C<FG : =69 C57?8 C G =68 @B 8@BE:7@A FE 5 ; ?8 G:<BEC8B A:8 58: 8>>8C5 5; @ <675 :9 G<J8: J;7C; 7 6J 9 6<C 6 7@ 75 F>6E8@C8 J;7C; ; J<:I8B ; E5 ><: ;<:5 57F8 J;7C; 7 6J 9 6<J @B >88=68 7@ 75 <G8: 57<@ @B J;7C; C<@ 5 @569 B7F7@7 ;8 7@ 7@58@ 759 ^

85 5;8:8 :8 <F8 J;< :8>E 8 5< =8678?8 5; 5 E@ >:< 5 @B J 58: ; ?8 G6 98B @ 7FG<:5 @5 G :5 7@ F<B86;@A 5;8 6G @B ;<6B 75 @ :57C68 <> 5;87: > 75; 5;8 6G7@8 :8A7<@ Z<J8 75 G:8 8@5 C<@><:F 57<@ F 7@69 5< 5;8 C57<@ <> 75 @C78@5 A6 C78: 3 P

9 :8?8:78 J 7@58::EG58B =9 :<S <= 8:?7@A 5; 5 75 J 57F8 5< =8 <>$ 8 5; 5J< ;<E: E>>7C8B 5< 5 I8 E 5< 5;8 A6 C78: G6 58 E =86<J MJ;8:8 J8 ; B 68>5 <E: = AA A8N 5;:88 HE :58: <> @ ;<E: F<:8 G6 C8B E EG<@ 5;8 B8G:8 7<@ =85J88@ 5;8 &: @B <:@78: @B 5;8 ' 8@5 6 @C;8 M <6 BE &: @B <:@78:5N @B 5 $ $ J8 ::7?8B 5 =:7C</ $:<S @B 78@8: ; @I8:8B >58: F76I @B B8 C8@B8B >< ?766 A8 6<J"8: B<J@5;8 ? 6689 =E5 7F8: @B 5 98B J;8:8 J8 J8:8 @B G 8B C;7669 @7A;5 <@ <F8 G6 @I 7@ ; 6> =E:@5 C; 685$!c

P :<>8 <: 9@B 66 Z @5;8 <@><:F 57<@ <>5;8 6G 03 $ ' 8G5$ Q$ 5 ;7 ; B =88@ C:< 8B ><:5;8 >7: 5 57F8 >8J F<@5; =8><:8$

_ ;8 ><66<J7@A B85 76 F 9 7@58:8 5 F<E@5 7@ C67F=8: $ 8>5 V777 6 M >885 Q$;8@C8 5< G6 58 E $ $ <> EF F75 <> &: @B <:@78: ;$ Q F7@$ 6 58 E 5< EF F75 <> F<E@5 7@ QZ ;<E: $;8 6 5 >885 <> 5;8 :7BA8 ><66<J8B J8:8 8LD C88B7@A69 ; :G @B @ 7 <J J75; A:8 5 C<:@7C8 >:<F J;7C; ;EA8 7C7C68 B8G8@B8B$) 8 J8:8 <=67A8B 5< A< $ 5;8 C<@77<8 @B 5< CE5 J 9 5;:<EA; 5;8 7C7C68 $ 8 C8@5 >:<F EF F75 5< G6 58 E ;$ 2 F7@$; :G @<J 5<:F J75; 5;E@B8:$ 6 58 E 5< EF F75 <> <6 BE &: @B <:@78: M:<C I 8 9N 2 F7@$ 4:<F 5;8 EF F75 <> 5;8 <6 5< 5;8 8@B <> A6 C78: 68 B7@A 5< %5;8 J8 5 F7@$;8@C8 5< =:7C</ M1 N F7@$

CHAPTER XIV.

THE ASCENT OF THE DENT BLANCHE.

"God help thee, Trav'ller, on thy journey far ;
The wind is bitter keen,—the snow o'erlays
The hidden pits, and dang'rous hollow-ways,
And darkness will involve thee.—No kind star
To-night will guide thee." . . .

H. KIRKE WHITE.

CROZ and Biener did not return until past 5 A.M. on June 17, and we then set out at once for Zermatt, intending to cross the Col d'Hérens. But we did not proceed far before the attractions of the Dent Blanche were felt to be irresistible, and we turned aside up the steep lateral glacier which descends along its south-western face.

The Dent Blanche is a mountain that is little known except to the climbing fraternity. It was, and is, reputed to be one of the most difficult mountains in the Alps. Many attempts were made to scale it before its ascent was accomplished. Even Leslie Stephen himself, fleetest of foot of the whole Alpine brotherhood, once upon a time returned discomfited from it.

LESLIE STEPHEN.

It was not climbed until 1862 ; but in that year Mr. T. S. Kennedy, with Mr. Wigram, and the guides Jean B. Croz* and Kronig, managed to conquer it. They had a hard fight though before they gained

* The brother of my guide Michel Croz.

5;8 ?7C5<:9 ' >E:7<E ' J7@B @B B:7?7@A @<J BB8B 5< 5;8 @ 5E: 6 B7>>7CE6578 @8 :69 5E:@8B 5;8 C 68 A 7@ 5 5;8F$P

:$ U8@@8B9 5 :58B >:<F ;:7C<66 ' =85J88@ Q @B ' $ $ <@ .E69 Q @B C8@B7@A 5;8 A6 C78: 5; 5 7 ' F8@57<@8B 7@ 5;8 <G8@7@A G : A: G;J8@5 5<J :B ' 5;8 G<7@5 F :I8B Q F85:8 ' EG<@ 5;8 F G 5;8@ 5E:@8B 5< 5;8 68>5 M5; 5 7 5< 5;8 @<:5;N @B C<F G6858B 5;8 C8@5 =9 5;8 <E5;8:@ :7BA80K 5; 5 J;7C;'<?8:; @A ' 5;8 J8 58:@ 7B8 <> 5;8 C;<@=77;6 A6 C78:$

:$ U8@@8B9 B8 C:7=8B ;7 ' 8LG8B757<@ 7@ ' ?8:9 7@58:8 57@A G G8: 7@ 5;8 ' 8 W ' 7 ' CC<E@5 =<:8 5;8 7F G:8 ' <> 5:E5;'=E5 5F=8678?8: ' 7B 5; 5 75 J ' 7F G< 7=68 5< ; ?8 5<6B M7@ J8 5;8: EC;' ' J '8LG8:78@C8BN J;85;8: 5;8 E F F75 ; B C5E 669 =88@ 55 7@8B @B <F857F8 ' :<E@B69 8:58B 5; 5 5;8 F<E@5 7@ ' 5;8 97@A 7 985 :8F 7@8B ?7:A7@$

' B7B @<5 ; :8 5;8 8 B<E=5 65;<EA;' 5;89 7@>6E8@C8B F8 5< F I8 5;8 C8@5$ ' 5;<EA;5 75 F7A;5 =8 G< 7=68 5< >7@B @ 8 78: :<E58 5; @ 5; 5 5 I8@ =9 :$ U8@@8B9 @B 5; 5 7>J8 ECC88B8B 7@ B7 C<?8:7@A <@8 J8 ;<E6B =8 =68 5 <@C8 5< :8>E58;7 ' 5: BEC8: @B 5< ? E@5 <E:' EG8:7<:' J7 B<F$ C5E 58B =9 5;8 8 868? 58B F<57?8 ; ' 658B F9 675568 :F9 5 5;8 ><<5 <> 5;8 A6 C78: @B 7@D HE7:8B Z) ;7C;' 7 ' =8 5 ><:' E ' 5< B< ^K 5< C8@B 5;8 ' 8@5 6 @C;8 <:5< C:< ' 5< V8:F 55 ^3 ;89 @ J8:8B J75;'=8>7557@A <68F@759 Z) 8 5;7@I ' ' 8@5 6 @C;8 7 ' =8 5$3

4:<F 5;8 C; 685 ' <> =:7C<66 ' 5;8 <E5; J8 5 > C8 <> 5;8 ' 8@5 6 @C;8 7 ' :8A :B8B 6F< 5 8L C569 7@ G:<>768$ 4:<F 5;8@C8 75 7 ' 88@ 5; 5 5;8 @A68 <> 5;8 > C8 C :C869 8LC88B ' 5;7:59 B8A:88 @B >58:' <= 8:?7@A 5;7 ' ' C<@C6EB8B 5; 5 5;8 > C8 J<E6B 7@ 66 G:<D = =76759 A7?8 @ 8 78:' G 5;' 5< 5;8 E F F75 5; @ 5;8 C:8 5 <> 5;8 ?8:9 ! AA8B :7BA8 J;7C;' J ' ><66<J8B =9 :$ U8@@8B9$

) 8 S7AS AA8B EG 5;8 A6 C78:' 6<@A 5;8 ><<5 <> 5;8 > C8 @B 6<<I8B ><:' ' J 9 <@ 5< 75$) 8 6<<I8B ><:' <F8 57F8 7@ ? 7@ ><:' ' F7A;59 $ ' $ 2 ' 8>>8C5E 669 G:8?8@58B GG:< C; @B 67I8 ' ><:5:8 R F< 5 G:<58C58B 5;8 J 66 >:<F E65$) 8 J8@5 EG @B

P 88 @<58 5< G$ $ 5' 88 F G <> 5;8 (6689 <> V8:F 55$

67G0' E@5760' ' EGG< 80' J8' J8:8' @<5' F<:8' 567 @' '567<E @B' >885' =86<J' 5;8' G<7@5' F :I8B' +' F85:8'0' 5;8@' '=:7BA8' J ' B7 C<?8:8B0' @B' J8' B:<GG8B' B<J@' <@' ; @B ' @B' I@88 '5<' C:< '75$

o

'=8:A C;:E@B0' 75' J ' 7B' <@' G$ Q 0' 7 ' ' C;:E@B0' @B' <F8D 5;7@A' F<:8' 5; @' ' C;:E@B$ ' C;:E@B' 7 ' 7F G69' '=7A' C:8? 8$ '=8:A C;:E@B' 7 '>:8HE8@569'0' =E5' @<5' 6J 9 0' '=7A' C:8? 8$;8' 58:F'7 ' GG678B' 5<'5;8'6 5' <>'5;8'C:8? 8'5; 5' <@8'>7@B 0'7@' C8@BD 7@A0' =8><:8' HE7557@A'5;8' A6 C78:0' @B' 5 I7@A' 5<' 5;8' :<CI ' J;7C;' =<E@B' 75$ 5' 7 ' 5;8' F<E@5 7@ R C;:E@B$ <F857F8 ' 75' 7 ' ' 6 :A80' =E5' 8 :69' ;'5;8' 8 <@'M5; 5'7 '5<' 9'7@'5;8' F<@5;' <>'.E@80' <:'=8><:8N' =8:A C;:E@B ' :8'E E 669' @<J8B'EG0' <:' J866'=:7BA8B' <?8:0' @B' B<' @<5' A7?8' FEC;' 5:<E=68$ 58:'7@'5;8'98 :0' 9'7@' EAE 50' 5;89' :8' >:8HE8@569' ?8:9' A:8 5' ;7@B: @C8 0' @B' <CC 7<@ 669' :8' C<F G685869'7FG =68$

;89' :8'67@8 '<>':EG5E:8'C<@ 8HE8@5'EG<@'E@8HE 6'F<57<@$;8' A6 C78:' '=86<J' F<?8' HE7CI8:' 5; @' 5;8' @<J'<:' 7C8' J;7C;'C67@A' 7F F8B7 5869'5<' 5;8' F<E@5 7@'0' ;8@C8' 5;8 8' >7 F 8' :8 E65$;8' 6<J8:' F<57<@' <>'5; 5' J;7C;' 7 ' =<?8' C @'<@69'=8' 55:7=E58B' 5<' 75' ; ?7@A'5<' E 5 7@'A:8 58:'>:7C57<@'0' ><:' 5;8' :E68' 7'5; 5' 5;8' EGG8:' G<:57<@' 7 ' 85' 5' ' 588G8:' @A68' 5; @' 5;8'6<J8:$ '5; 5'7'5;8' C 80' J8' ;<E6B' 8LG8C5'5; 5'5;8'EGG8:' G<:57<@' J<E6B' F<?8'O2 ' 5; @' 5;8'6<J8:0' @B' 75' J<E6B' B<' <0' B<E=568 0' =E5'><:'5;8':85 :B D 57<@'<>'5;8':<CI'<?8:' J;7C;0' @B'5;:<EA;' J;7C;0'75'G 8$P

) 8'C:< 8B'5;8'=8:A C;:E@B'<>'5;8' '8@5' 6 @C;80' ' EGG< 80' 5' ' ;87A;5' <>' =<E5' Q0 ' >885' =<?8'5;8'68?86' <>'5;8' 8 $ E:' *#9<:I' F 9'=8' 7B' 5<' ; ?8' <F F8@C8B' 5'5; 5' G<7@5$;8' > C80' 65;<EA;'@<5' 588G' 7@'75' ' A8@8: 6' 7@C67@ 57<@0' J ' <' CE5' EG' =9' 675568':7BA8' @B' C67>> 0' @B' <' 8 F8B' J75;'7@C7G78@5' C<E6<7: 0'5; 5' 75' ; B' 66' 5;8' B7>>7CE659' <>' ' FEC;' F<:8' G:8C7G75<E ' 6<G8$;8' B7>>7CE6578 ' J8:8' @8?8:' A:8 50' =E5' 5;89' J8:8' @EF8:<E 0' @B' F B8' ' ?8:9' :8 G8C5 =68' 5<5 6' J;8@' GE5' 5<A85;8:$) 8' G 8B' 5;8

P' <E6<7:' :8'7@? :7 =69'G:<58C58B' 5'56787:'= 8'=9'=8:A C=:@@B $ @'8L FG68' <>' 'C<E6<7:' J75;' 'B<E=68' =8:A C;:E@B'7 'A7?8@' <@'G$ QQ $

THE BERGSCHRUND ON THE DENT BLANCHE IN 1865.

=8:A C;:E@B$ <<@$ >58:' @7@8$ 7@' 5;8$ F<:@7@A0 @B$ BE:7@A' 5;8$ @8L5'
c868?8@$;<E:' ; 658B$ <@69' >7?8 @B ><:59' F7@E58 $;8$ J;<68$ <>'
5;8$:8F 7@B8:' <>' 5;8$ 57F8$ (' <CCEG78B$ 7@' C8@B7@A' @B$ B8 C8@BD
7@A' 5;8$ Q2 ' >885' J;7C;' C<FG< 8$ 5;7 ' <E5; J8 58:@$ > C80 @B$
7@ FEC;' ' ' >885' G8:';<E:' M5 I7@A' 5;8$ F8 @$ <>' C8@5' @B$
B8 C8@5N 7 ' @$ <:B7@ :9' : 58$ <>' G:<A:8 7<@0 75' 7 ' 5<68: =69' C8:5 7@'
5; 5'5;8$ ' 8@5' 6 @C;8$7 ' ' F<E@5 7@' <>' 8LC8G57<@ 6 B7>>7CE659$
;8$;7@B: @C8 ' <GG< 8B$ 5<' E ' =9' 5;8$ F<E@5 7@' 75 86>' J8:80
;<J8?8:0 ' @<5;7@A' C<FG :8B$ J75;' 5;8$ 5F< G;8:7C <= 5:EC57<@ $
5' 7 ' 5:E8$ 5;8:8$ J ' G68@59' <>0 Z :8$ 9<E' > 5$ 7F8:^3 Z 8 $3
Z'&< ;8 B0 78@8:$3 78@8:0 F B8$ 8CE:80 C:78B0 Z' <F8$ <@0 7:03
@B$ 2 ' 8@B8 ?<E:8B$ Z'%<0 @<03 7B$ 7F8:0 Z'@<5';8:80K'
8:803 G<7@57@A'J75;' ;7 '=665<@5<'5;8$:7A;5'G6 C8$5<'C6E5C;$;8@
R5J ' :<SR'5E:@0 @B$J8$ 66$ B:8J'7@'5;8$:<G8$ ' 5;8$ A:8 5'F @
><66<J8B$ Z%<:J :B 3<@C8$ F<:8K @B$ ' <@$
47?8$;E@B:8B$>885' <>'5;7 ' I7@B$ <>' J<:I';B$=88@$ CC<FG67 ;8B'
J;8@$ J8$ J8:8$ 6E58B$ M@<5'8@57:869' E@8LG8C58B69N =9'5;8$ >7: 5'AE 5'
<>' ';E::7C @8$ J;7C;' J ': A7@A' =<?8$;8$B 9' J ' '6<?869'<@8$
><:'BJ8668: '7@'5;8$? 6689 0 =E5' J8$; B0 6<@A' A<0 @<58B$ <F8$67A;50
A< F8:' C6<EB 0 5; 5' J8:8$;<?8:7@A' :<E@B$ <E:' EF F750 =87@A'
B: J@'<E5' 7@' ' E G7C7<E'F @@8:' 7@5<' 6<@A0 76I9'5;:8 B $:<S0
7@B88B0 G:<G;8 78B$ =8><:8$ J8$; B$ C:< 8B$ 5;8$ C;:E@B0 5; 5' J8'
;<E6B$ =8$ =8 58@$ =9'5;8$ J7@B0 @B$; B$ B?7 8B$ 5; 5' J8$;<E6B'
:85E:@$ E5' ' ; B$:85<:58B0 Z%<0 F9' A<<B$:<S0 9<E' 7B$!E 5'
@<J'c'8@5' 6 @C;8$7 '=8 5J8'FE 5'A<'EG'5;8$ '8@5' 6 @C;8$3
' ; ?8$ '?8:9'67?869' @B$B7 A:88 =68$:8C<668C57<@' <>' 5;7 ' J7@B$
/G<@' 5;8$ <E5 I7:5 ' <>' 5;8$ B7 5E:=8B$:8A7<@' 75' J ' <@69' >865' <CC D
7<@ 669$ 5'5;8@' 88F8B$ 5<' F I8$:E ;8 ' 5' <@8$ G :57CE6 :' F @0
@B$J;8@'75' ; B$B7 C<F>758B$;7F0 75' J;7 I8B$ 75 86>' J 9'5<' <F8$
> : <>' G<50 <@69'5<' :85E:@0 G:8 8@5690 7@'A:8 58:'><:C8$5; @'=8><:8$
9'<6B$ 8@8F9K5;8$ 558:;<:@K 88@' C:< ' 5;8$ = 7@' <>' 5;8$
VR E55A685 C;8:0 6<<I8B'5<5 669'E@ 76 =68$ Z''<' 9<E'5;7@I0Q'5;8$
F8@' I8B0 Z5; 5' 9<E0 <:' @9' <@8$ 86 80 J766 8?8:' A85' EG' 8 '
F<E@5 7@^3 @B' J;8@0 E@B7 F 98B$ =9'5;87:' :7B7CE680 ' 5<E569

@ J8:8B0 Z 8 0 =E5 @<5 EG<@5; 5 7B803 5;89 =E: 5 7@5< B8:7 7?8 C;EC168 $ ' FE 5 C<@>8 ' 5; 5 F9 ;<G8 ' @ I0 ><: @<5;7@A C @ 6<<I0 <: ;80 F<:8 C<FG6858695 7@ CC8 7=68 5; @ 5;8 558:;<:@ <@]75 ' @<:5;8:@ @B @<:5; J8 5 7B8 $

Z4<:J :B 3 <@C8 A 7@$) 8 <?8:5<GG8B 5;8 ' 8@5 BR 8:877 $ Z%<5 ' 5;<E @B >885 F<:80 7@ 5;:88 ;<E: ' J8 ; 66 =8 <@ 5;8 EF F75$3 Z <E F8 @ A 8C;<8B :<S0 < 6<J ; B =88@ 5;8 G:<A:8 $ E5 ' J ' @<5 > :' J:<@A 7@5;8 8 57F 58$ 5 $ ' J8 5:EC I 5;8 A:8 5 :7BA8 ><66<J8B=9 :$ U8@@8B90 C6< 8 5< 5;8 5<G <> 5;8 F<E@5 7@$;8 J7@B @B C<6B J8:8 58::7=68 5;8:8$:<A:8 ' J ' <>58@57F8 ' 7FG< 7=680 @B J8 J 758B0 C:<EC;7@A E@B8:' 5;8 688 <>:<CI 0 67 58@7@A 5< ¢5;8 ;:78I7@A <>' 5;8 F7@B68 ' J7@B0R J;768 5;8 =6 5 ' J8G5 C:< 0 58 :7@A <>' 5;8 EGG8:' @<J' @B =6<J7@A 75 J 9 7@ 5:8 F8: ' <?8:' 5;8 C;<@=77;6 A6 C78:K Z@<5677@A 88@ 8LC8G5 @ 7@B8 C:7= =68 J:75;7@A 7@ 5;8 7:0 67I8'' 5;8 J7@B F B8 ?7 7=68$3

E:' A< 6 J ' C<@C8 68B =9 F7 50 65;<EA;' 75 J ' <@69 ' >8J 9 :B ' J+90 @B :<SR ' G:<G;8C90 5; 5 J8 ;<E6B 5 9 66 @7A;5 EG<@5;8 EF F750 88F8B 67I869 5< C<F8 5:E8$;8 F8@ :< 8 J75;' 5;8 <CC 7<@0 65;<EA;' 8?8@5;87:' >7@A8: ' ; B @8 :69 6< 5 8@ 57<@$;8:8 J8:8 @< FE:FE:7@A 0 @<:' EAA8 57<@ ' <>' :85E:@0 @B 5;89 G:8 8B <@><:'5;8 675568 J;758 C<@8 J;7C;' 5;89 I8J F E 5 =8 @8 :' 5 ; @B$ 5<GG8B A 7@0 ' =7A F ' G8:C;8B 6<< 869 <@ 5;8 :7BA8 = ::8B5;8 J 90 J8 C<E6B @<5 C: J6 <?8:0 @B C :C869 B :8B C:88G :<E@B 75$;8 J7@8 J8@5 :<E@B ><:' 5;8 6 5 57F8$;8 67HE<:' J ' ; U >:<S8@0K 5766 J8 J<E6B F<:8 <> 75$ 5 J ' 66 A<@80 5;8 =<5568 J ' 68>5 =8;7@B0 @B J8 GE ;8B <@0 ><:' 5;8:8 J ' '6E66$

;8 8@B C F8 6F< 5 =8><:B 75 J ' 8LG8C58B$;8 C6<EB ' <G8@8B0 @B ' J' 5; 5)þ J8:8 /' =E5 EG<@5;8 ;7A;8 5 'G<7@50 @B 5; 50 =85J88@ E ' @B 750 =<E5 5J8@59 9 :B ' <>0 5;8:8 J ' ' 675568 :57>7C7 6 G768 <> 5<@8 $ U8@@8B9 J ' ' 5:E8 F @0K 75 J ' ' C 7:@ J;7C;';8 ; B 8:8C58B$ Z) ;5 7 '5; 50 : S^3 Z 4 ' ' A ;8 = J68B$ 5 J ' @88B68 '5< G:<C88B >E:5;8:' 0 '!8:I8B

5;8 :<G8>:<F 78778:0 @B F<57<@8B 5; 5 J8 J<E6B A< = CI$ 8 B7B 5;8 F8 5< 7F8:0 @B J8 5E:@8B7F F8B7 5869$ $ B7B@<5 88 5;8 5<@8 M5;89 J8:8 CE557@A><<5 58G N0 @B F7 7@58:G:858B 5;8 :8 <@ <> 5;8 :85:8 5$ (<7C8 J8:8 7@ EB7=680 @B 8LG6 @ 57<@ 7FG< 7=68$P

) 8 C<F F8@C8B 5;8 B8 C8@5 <> 5;8 > C8$ 5 J ;7B8<E J<:I$;8 F8@6<<I8B 67I8 7FG8: <@ 57<@ <>) 7@58:0 J75;5;87:; 7: 66 >:< 58B0 @B 5;87:=8 :B F 558B J75;7C8$ 9 ; @B J8:8 @EF=8B K B8 B$ =8AA8B 5;8 <5;8:5<5<G$ Z F & &&C :2 2 7 2 A J 5;87:8G69$;89 J8:8 :7A;50 5< 5<G J 5< =8 8@57:869>:<S8@$ < J8 J8@5 B<J@0 A:7GG7@A:<CI ? :@7 ;8B J75;7C80 J0 C;GE668B 5;8 I7@>:<F 5;8>7@A8: $ &6<?8 J8:8 E 868 0 5;89=8C F8 7C8B 5<<0 @B 5;8 = <@ 67B 56::<EA;5;8F 67GG8:9 886 0 ;8 7:<@ <> 5;8 L8 5EC I 5< 5;8>7@A8: K 75>865 :8B ;<50 =E5 75 J E 868 5< ;:7@I0 5;8 :<CI @B 5;8 L8 ; B 5< =8>7:F69 A: G8B K @< > 658:7@A J<E6B B< ;8:8$

) 8 5E:@8B = CI 5 2$ Q 1 2 (@B 5 $ C:< 8B 5;8 =8:A C;:E@B A 7@0 @<5 ; ?7@A ; 658B ><: F7@E58 EG<@ 5;8 8@57:8 B8 C8@5$ 'E:7@A5;8 6 5 5J< ;<E: 75 J J7@B68 0 =E5 57F8 J <> EC;?75 6 7FG<:5 @C8 5; 5 J8 G:8 8B <@ 7@C8 @5690 @B B7B @<5 5<G E@576 J8 J8:8 > 7:69 EG<@ 5;8 A6 C78:$;8@ J8 5<<I 5<CI <> J ; 5 :8F 7@8B <> 5;8 57G <> <E: >7@A8: 0 5;8:8 J @<5 FEC;I7@ 68>50 5;89 J8:8 G8:>8C569 : J0 @B ><: J88I >58:J :B J :8F7@B8B <> 5;8 C8@5 <> 5;8 '8@5 6 @C;8 =9 5;8 5J7@A8 J;7C;> 865 J;8@ GE668B <@ F9 =<<5 $;8 <5;8: 8 C G8B J75; <F8 ;A;5 >:< 5 =758 0 @B0 65<A85;8:0 J8 ; B :8 <@ 5< C<@A: D 5E6 58 <E: 86?8 5; 5 J8 A<5 <> < 67A;569$;8 F8@ C<FG67D F8@58B F8 EG<@ 5;8 B8 C8@50 @B C<E6B B< 5;8 F8 ;<@8 569 5< 5;8F$ >5;89 ; B J<:I8B 68 ?7A<:<E 690 <:; :F<@7<E 690 J8 ;<E6B ; ?8 =88@ =8@7A;58B EG<@ 5;8 > C80 J;8:8 5;8:8 J @<5 7@A68 G<5 EG<@ J;7C;75 J G< 7=68 5< 750 @B 7>5; 5; B ; GD G8@8B0 B< @<5 5;7@I 5; 5 <@8 J<E6B ; ?8 7E?7?8B 5< 5866 5;8 5 68$

P ;8 EFF75 <> 5;8 '8@5 6 @C;8 7 : :7BA80 G8:; G <@8 ;E@B:8B :B 7@ 68@A5;$;8 ;7A;C$ 5 G<7@5 7 E E 669 5 75 @<:5; 8 $ 5C@7 8@B$

We made the descent of the glacier in a mist, and of the moraine at its base, and of the slopes below, in total darkness, and regained the chalets of Abricolla at 11.45 P.M. We had been absent eighteen and a half hours, and out of that time had been going not less than seventeen. That night we slept the sleep of those who are thoroughly tired.*

Two days afterwards, when walking into Zermatt, whom should we meet but Mr. Kennedy. "Hullo!" we said, "we have just seen your cairn on the top of the Dent Blanche." "No, you haven't," he answered, very positively. "What do you mean?" "Why, that you cannot have seen my cairn, because I didn't make one!" "Well, but we saw *a* cairn." "No doubt; it was made by a man who went up the mountain last year with Lauener and Zurfluh." "O-o-h," we said, rather disgusted at hearing news when we expected to communicate some, "O-o-h! good morning, Kennedy." Before this happened, we managed to lose our way upon the Col d'Hérens; but an account of that must be reserved for the next chapter.

T. S. KENNEDY.

* The ascent of the Dent Blanche is the hardest that I have made. There was nothing upon it so difficult as the last 500 feet of the Pointe des Ecrins; but, on the other hand, there was hardly a step upon it which was positively easy. The whole of the face required actual climbing. There was, probably, very little difference in difficulty between the route we took in 1865, and that followed by Mr. Kennedy in 1862.

A6 C78:'0 @B'G6 C8B' 78@8:'5<'68 B0' ';8' ; B'>:8HE8@569'C:< 8B'5;8'
G '0 EGG< 7@A'5; 5';7'6<C 6'I@<J68BA8'@<7A;5' ?8'E' <F8'57F8'
EG<@'5;8'<5;8:' 7B8$) 8' ; B'G:<C88B8B0' ' EGG< 80' =<E5' ; 6>D
J 9'EG0' J;8@' '675568'0 5;7@' C6<EB' B:<GG8B' B<J@' EG<@'E' >:<F'
=<?8'0 ;E5'75' J ' <'67A;50' <'A ES90'5; 5' J8'B7B'@<5'><:' ' F<F8@5'
EGG< 8'5; 5'75' J<E6B'=8C<F8'8F= F 7@A0' @B';8@C8' '@8A68C58B'
5<'@<58' 5'5;8'G:<G8:' F<F8@5'5;8'C<F 8'J;7C;' J8' ;<E6B' 588:0K'
5; 5'7'5<' 90'5<' <= 8:?8' <E:' G:8C7 8' 75E 57<@0'7@':8A :B'5<'5;8'
EF F75'<>'5;8'G $

4<:' <F8'675568'57F8' 78@8:'G:<A:8 8B' 58 B7690' F I7@A' '5<68:D
=69' 5: 7A;5'5: CI0 ;E5' 5'68@A5;';8'J ?8:8B0' @B'B8?7 58B' <F8D
57F8'5<'5;8':7A;50' @B' <F857F8'5<'5;8'68>5$:<S':E ;8B'><:J :B'
B77F8C569';8' J'5;7 0' @B'5 I7@A'5;8'G<<:' 9<E@A'F @'=9';7'
;<E6B8:'A ?8';7F' 'A<<B' ; I7@A0'5<6B' ;7F'5; 5';8'J ' @'7FD
=8C768'0 5<'E@578';7F 86>' 5'<@C80' @B'A<'5<'5;8':8 :$ 78@8:'6<<I8B'
; 6>>:7A;58@8B0' @B'<=898B'J75;<E5'FE:FE:$:<S'68B' &&'=:7 I690'
@B'F B8' 'A<<B' 5: 7A;5'5: CI'><:' '>8J'F 7@E58 =E5';8@0'75'
88F8B'5<'F80'=8A @'5<'F<(8' 58 B769':<E@B'5<'5;8'68>5$ '6<<I8B'
= CI0'=E5';8'7;7'5'J ' @<J'5<<'5;7CI'5<' 88'<E:'5: C8 0' @B'<'J8'
C<@57@E8B'5<'><66<J' <E:'68 B8:$ 5'6 5'5;8'<5;8:' MJ;<'J8:8'
=8;7@B0' @B'7@' '=8558:'G< 757<@'5<'!EBA8N'5;<EA;5'5;8' F8' ''
B7B0' @B'J8'G7B68B'EG' :<S'5<'B8;?8:'<E:'<G7@7<@$ 8'5<<I'
<E:'C:757C7 F'7@'A<<B'G :50'=E5'J;8@' 78@8:'<G8@8B';7'F<E5;'5; 5'
? '5<<'FEC;'><:';7F'5<' 5 @B0' @B';8'5<6B'5;8'9<E@A'F @' A 7@0'
Z =E' :8'7F=8C768'0 '=85'9<E'5J8@59'>: @C'5<'<@8'5; 5' '5: CI'
7'=8558:'5; @' 2 C'5J8@59'>: @C 0'@<J'5;8@0'7F=8C768' 3

7F8:'J8@5'5<'5;8'>:<@5$ 8'C<FF8@C8B'=9':85E:@7@A'7@'5;8'
5: CI'><:' ';E@B:8B'9 :B'<:' <0' @B'5;8@' 5 :58B'<>>' 5'5 @A8@5'
>:<F' :<SR'C7::?8$) 8'I8G5'5;7'C<E: 8'><:' ; 6> @ ;<E:0' @B'5;8@'
J8:8' C8:5 7@'5; 5' J8' J8:8' @<5'<@'5;8' :7A;5' :<E580' =8C E 8'5;8'
@<J'=8C F8' B8C7B8B69'588G$) 8'=<:8' J 9'F<:8'Y @B' F<:8'5<'
5;8' :7A;50'5<' ?<7B'5;7'588G' = @I0'=E5' 5'6 5' ' :8=8668B0' 'J8'
; B'><:' <F8'57F8'=88@'A<7@A' 6F< 5' <E5; J8 50' J;7C;' J '
65<A85;8:' 5;8' J:<@A' B7:8C57<@$ >58:' ' 6<@A' B7 CE 7<@' J8

:85E:@8B <F8 B7 5 @C8 7@ <E: 5: CI @B 5;8@ 588:8B 675568 8 5 <> <E5; E5 J8 C<@57@E 669 F85 588G @<J 6<G8 @B 5< ?<7B 5;8F J8@5 :7A;5 <:68>5 5;8 C 8 F7A;5 :8HE7:8$

Y((8 J8:8 A:8 569 GESS68B@ @B C<E6B @<5 7@ 5;8 68 5 5866 J;85;8: J8 J8:8 5<< @8 : 5;8 '8@5 6 @C;8 <: 5<< C6< 8 5< 5;8 858 6 @C;8$;8 F7 5 '; B 5;7CI8@8B@ @B J8:8 @<J' 'B8@ 8 ' F<B8: 58 <@B<@ ><A$;8:8 J8:8 @< :<CI '<: 8C;<8 '5< B7:8C5 E @ @B5;8 AE7B @C8 <>5;8 C<FG '=:<EA;5 E '7@? :7 =69 A 7@ 5'5;8 8 588G @<J = @I $;8 F8@ J8:8 > 7:69 =8 58@ @ 5;89 ; B 66 ; B '5:9 <: F<:8 5; @ <@8 @B 5'6 5 A ?8 75 EG ' '= B !<= @B I8B J; 5 J '5< =8 B<@8$ 5 J ' 1$ ' 1 2 ' @B <@69 @ ;<E: <> B 967A;5 J '68>5$) 8 J8:8 =8A7@@7@A 5< >886 E 8B EG@ ><: J8 ; B J @B8:8B =<E5 5 57G 5<G G88B><:5;8 6 5 56::88;<E: ' @B ';6> < ' 7B@ Z ;7 '7 ' F9 B?7C8 @ 685 E '5E:@ 7@ <E:5: CI @B A< = CI ' ; :B '8?8: J8 C @ @<5 HE7557@A 5;8 5: CI ><: @ 7@ 5 @5$3 ;89 J8:8 J8 /' C<@58@5 =E5 !E 5 ' J8 J8:8 5 :57@A <>6 5;8 C6<EB '67>58B '675568 @B J8 5;<EA;5 J8 J 5;8 <6 5 J '5;8@5< <E: :7A;5 @B J8 J8@5 5 75 J75;' 'B ;=E5 =8><:8 J8 ; B A<@8 ';E@B:8B G C8 ' B<J@ C F8 5;8 F7 5 A 7@$) 8 I8G5 <@ @8?8:5;868 ' ><: 5J8@59 F7@E58 @B 5;8@ 'B :I@8 ' J ' G8:C8G57=69 C<F7@A <@ @B 5;8 @<J' J '985 :7 7@A 7@ >:<@5 J8 5E:@8B = CI @B =9 :E@D @7@A B<J@ 5;8 8@57:8 B7 5 @C8 F @ A8B 5< A85 C68 :<> 5;8 48:G+C68 A6 C78:!E 5 '75 =8C F8 G75C;' B :I) 8 ::7?8B 5 <E: C;88:68 ' C; 685 7@ BE8 C<E: 8 @B J8@5 5< =8B EGG8:68 @><: <E: ><B J ' A<@8 66 ?8:9 E6I9K +@<5 5< 9 ? A8K A:887@A 7@ @<5;7@A 8LC8G5 7@ =E6697@A 78@8:$

5 1 $ <@ 5;8 5;8 5 85 <E5 ><: 5;8 5;7:B 57F8 ><: 5;8 <6 BR 8:8@ $ 5 J ' '>7@8 B 9 @B J8 A: BE 669 :8C<?8:8B <E: 58FG8: ' J8 J' 5;8 ><6678 ' J;7C;' ; B =88@ C<F F7558B <@ 5;8 G:8?7<E ' 8?8@7@A$ 78@8:R' J ?8:7@A 5: CI' J '@<5 < = B =E5 :<S ; B J8:?8B >:<F' 5;8 :7A;5 :<E58 >:<F' 5;8 >7: 5 @B ; B 5: C8B ' C<FG6858 8F7C;C68 < 5; 5 J;8@C8 J8 ; B 5 :58B$ 7F8: ; B C<FD F8@C8B J75;' A:8 5 B7 C:857<@ =E5 ;8 I8G5 <@ 5<< 6<@A @B C:< 8B

5;8G:<G8:: :<E58$);8@ 5<GG8B5;8F M=8C E 8 J8 J8:8A<7@A <E5; J8 5N J8 J8:8 6<@A J 9EG 5;8 858 6 @C;8 E:6 5 558FG5 J 7@5;8 :7A;5 B7:8C57<@ J8 J8:8 C5E 669EG<@5;8 EF F75<>5;8G @B7@ @<5;8:58@ 9 :B J8 ;<E6B; ?8C<FD F8@C8B5< A<Y B<J@;7/ 5 7 @88B68 5< G<7@5 <E5 5; 5 7>5;8 C<FG ; B =88@ 6<<I8B5< 5 5;8 G:<G8: F<F8@5K5; 5 7 7FD F8B7 5869 5;8 F7 5 C F8 B<J@K J8 ;<:BB; ?8 ?<7B8B 66 <E: 5:<E=68 $ 5 J 675568 E 8 >58:J :B 8LC8G5 5< 5866 E J;8@ J8 J8:8A<7@A 9 '

)8 ::7?8B 5 V8:F 55 7@ 7L @B ; 6>;<E: R J 6I7@A >:<F =:7C<66 @B 8B8:R ;< G75 =68 :8C8G57<@ 85 E 66 :7A;5 A 7@$ @5;8Q 5; J8 C:< 8B5;8 ;8<BE68G @B B7?8:A8B >:<F 75 EF F75EG5;8 ;8<BE6;<:@ M 0 N 5< 8L F7@8 :<E58 J677C; EAA8 58B><:5;8 C8@5<>5;8 558:;<:@ =E5 =8><:8C<@57@E7@A @ CC<E@5<>5<E:G:<C88B7@A @ FE 5 5<G><: F7@E58 5< 8LG6 7@ J;9 5;7 @8J:<E58 J G:<G< 8B 7@G6 C8 <>5; 5 EG 5;8 <E5;D J8 58:@ :7BA8$

;8 558:;<:@F 9=8 B7?7B8B 7@5< 5;:88 8C57<@ $P ;8 >7: 5 > C7@A 5;8 VR E55A685 C;8: J;7C; 6<<I @B 7 C<FG685869 E@ D 76 =68 0 5;8 8C<@B > C7@A 5;8 8 5 J;7C; 88F 7@ CC8 7=76759 75 86>0 5;8 5;7:B > C7@A :876 J;7C; B<8 @<5 6<<I 8@57:869 ;<G8D 68 $ 5 J >:<F5;7 6 5 BF8C57<@ 5; BF8C57<@ 5; 66 F9G:8?7<E 558FG5 J8:8F B8$ 5 J =9 5;8 <E5; J8 58:@ :7BA8 75 J766 =8 :8F8FD =8:8B 5; 5 @<5 <@69 =E5 :$ JI7@ :<>8 <: 9@B 66 @B 5;8C; 8E: <> (6 <E:@ @C;8 8 98B 5< C67F=5;8 F<E@5 7@$);9 5;8@ = @B<@ :<E58 J;7C; ; B =88@ ;<J@ 5<=8>8 7=68 EG 5< C8:5 7@ G<7@5^

A ?8 75 EG><: ><E: :8 <@ $ $ @ CC<E@5 <> F9A:<J7@A B7 7@C67@ 57<@ ><: :858 @B G:8>8:8@C8 ><: @<J @B :<CI> C8 M 88 ; G L777$N Q$ 8C E 8 J G8: E B8B 5; 5 F858<:<6<A7D C 6 B7 5E:= @C8 M=9 J;7C; J8 ; B =88@ = >>68B 8?8: 6 57F8 N F7A;5 =8 8LG8C58B 5< <CCE: A 7@ @B A 7@>M 88 ; G ?$ @B

P 88 ; G$ 7?$ G!N$ Q 2$

>E= 8HE8@5 8LG8:78@C8 <>5;8: ; ?8 5:8@A5;8@8B 5677 <G7@7<@$

CAMP

THE MATTERHORN FROM THE RIFFELBERG.

' #! '#(%' ! #' $ ' ' #' !''#($(%

?77$N0 $ 8C E 8' '><E@B' 567 5'5;8'8 5'> C8'J ' 'A < '7FG< 757<@'
K75'6<<I8B'@<5'> :'>:<F'G8:G8@B7CE6 :0 J;768'75' @A68' J 07@'> C50
C :C869'F<:8'5; @'2 `$ 2$ 8C E 8' '<= 8:?8B'><:'F9 86>'5; 5'5;8'
5: 5''<>'5;8'F<E@5 7@' B7!!G8B'5<'5;8' J85 <E5; J85$ 5'7'@<5'
@8C8 :9'5< 9' @95;7@A'F<:8'5; @' ; '=88@' 6:8 B9' 7B'EG<@'5;8'
>7: 5'5J<'<>'5;8 8'><E:'G<7@5 0 =E5'EG<@'5;8'6 558:'5J<' >8J'J<:B'
:8'7@B7 G8@ =68$ 85'E'C<@ 7B8:0>7: 50 J;9'F< 5'G8: <@' :8C87?8'
EC;' @'8L AA8: 58B'7FG:8 7<@'<>'5;8' 588G@8 '<>'5;8'8 58:@'> C8$
) ;8@'<@8'6<<I' 5'5;8' 558:;<:@'>:<F'V8:F 550'5;8'F<E@5 7@'
7':8A :B8B'M@8 :69N >:<F'5;8'@<:5; 8 5$;8'> C8'5; 5'>:<@5'5;8'
8 5'7' C<@ 8CG78@569'@875;8:' 88@'7@' G:<>768' @<:'7@'>E66'>:<@50 =E5'
6F< 5' ; 6> J 9'=85J88@'5;8'5J<'0 75'6<<I 0 5;8:8><:80 F<:8' 588G'
5; @'75' :8 669'7 $;8'F !<:759'<>'5;< 8' J;<?7 75' V8:F 55' A<'EG'
5<'5;8' 7>>86=8:A0 <:'5<'5;8' &<:@8:A: 50 @B' >:<F'5;8 8' G6 C8'
5;8'F<E@5 7@' @ 5E: 669'6<<I' 5766'F<:8' G:8C7G75<E 0 =8C E 8'75'
8 58:@'> C8'MJ;7C;'7' 6F< 5' 66'5; 5'7' 88@'<>'75N 7''?78J8B'F<:8'
B7:8C569'7@'>:<@5$ 4:<F'5;8' 7>>86';<586'5;8'6<G8' 88F'5<=8'85'
5' @' @A68'<>'1 `$ >'5;8'5<E:7 5'C<@57@E8'5<'A<'<E5;J :B 0 @B'
C:< 8'5;8' ;8<BE68$G 0 ;8'A85 0 5'<@8'G<7@50 7F F8B7 5869'7@'
>:<@5'<>'5;8'8 58:@'> C80 J;7C;'5;8@' 88F'5<';8' = <6E5869'G8:D
G8@B7CE6 :$ <FG : 57?869'>8J'G8: <@''C<::8C5 5;8'8::<@8<E'7FD
G:8 7<@'5;89':8C87?8'7@'5;8 8' HE :58:'=9' 5EB97@A'5;8'>C8'7@'
G:<>768 0 @B'F< 5'A< J 9'J75;'' ?8:9'7@C<::8C5 @B'8L AA8: 58B'
7B8'<>'5;8'G:8C7G75<E @8 '<>'5;7' 7B8'<>'5;8' F<E@5 7@0 =8C E 8'
5;89'; ?8'C<@ 7B8:8B'5;8'HE8 57<@'>:<F'<@8'G<7@5'<>'?78J' 6<@8$
8?8: 6 98 :'G 8B' J 9'=8><:8' ';<<I'F9 86>'C68 :'<>'F9'
8 :69' @B'> 6 8'7FG:8 7<@'':8A :B7@A'5;8' 588G@8 '<>'5;7' 7B8'<>'
5;8' 558:;<:@$ 47: 5'<>' 0 '@<57C8B'5; 5'5;8:8'J8:8'G6 C8'<@'
5;7'8 58:@'> C8' J;8:8' @<J':8F 7@8B'G8:F @8@569' 66'5;8'98 :'
:<E@B$ 'B<@<5' G8 I'<>' @<J'7@' AE6678 0 =E5'<>'5;8'C<@ 7B8: =68'
6<G8'J;7C;' :8' 88@'EG<@'5;8' CC<FG @97@A'8@A: ?7@A0 =<E5'; 6>D
J 9'EG'5;8'> C8$ EC;'=8B' '5;8 8'C<E6A6@<5'C<@57@E8'5<':8F 7@'
5;:<EA;<E5'5;8' EFF8:0 E@68 '5;8' @<J'; B'=88@' =68'5<' CCEFED
6 58'7@'5;8'J7@58:'7@'6 :A8' F 8'0 @B' @<J'C @@<5' CCEFE6 58

@B‵ :8F 7@‵ 7@‵6 :A8‵ F 8 0‵ 7@‵ ‵ 75E 57<@‵ EC;‵ ‵ 5;7 0‵ 5‵ @A68 ‵ FEC;‵ 8LC88B7@A‵ 2 `$P‵ 8@C8‵ ‵ J ‵ ;<E@B‵ 5<‵ C<@C6EB8‵ 5; 5‵ 5;8‵ 8 58:@‵ > C8‵ J ‵ F @9‵ B8A:88 ‵ :8F<?8B‵ >:<F‵ G8:G8@B7CE6 :7590 @B0‵ 5<‵ =8‵ E:8‵ <@‵ 5;7 ‵ G<7@50‵ ‵ J8@5‵ 5<‵ 5;8‵ 6<G8 ‵ =85J88@‵ 5;8" VR E55A685 C;8:‵ @B‵ 5;8‵ 558:;<:@A685 C;8:0‵ =<?8‵ 5;8‵ C; 685 ‵ <>‵ 5 >>860‵ J;8@C8‵ 5;8‵ > C8‵ C<E6B‵ =8‵ 88@‵ 7@‵ G:<>768$ 5 ‵ GG8 : @C8‵ >:<F‵ 5;7 ‵ B7:8C57<@‵ J<E6B‵ =8‵ F S7@A‵ 5<‵ <@8‵ J ;<‵ ; B‵ 88@‵ 75‵ <@69‵ >:<F‵ 5;8‵ 8 5$ 5‵ 6<<I ‵ <‵ 5<5 669‵ B7>>8:8@5‵ >:<F‵ 5;8‵ GG :8@569‵ ;88:‵ @B‵ G8:>8C569‵ E@C67F= =68‵ C67>>‵ <@8‵ 88 ‵ >:<F‵ 5;8‵ 7>>86;8:A0‵ 5; 5‵ 75‵ 7 ‵ ; :B‵ 5<‵ =8678?8‵ 5;8‵ 5J<‵ 6<G8 ‵ :8‵ <@8‵ @B‵ 5;8‵ F8‵ 5;7@A$ 5 ‵ @A68‵ C :C869‵ 8LC88B ‵ 2 `$

‵ A:8 5‵ 58G‵ J ‵ F B8‵ J;8@‵ 5;7 ‵ J ‵ 68 :@5$;7 ‵ I@<JD 68BA8‵ 6<@8‵ J<E6B‵ @<50‵ ;<J8?8:0‵ ; ?8‵ C E 8B‵ F8‵ 5<‵ 5:9‵ @‵ C8@5 =9‵ 5;8‵ 8 58:@‵ > C8‵ 7@ 58 B‵ <>‵ =9‵ 5;8‵ <E5; J8 5‵ :7BA8$ 4<:59‵ B8A:88 ‵ F 9‵ @<5‵ 88F‵ ‵ ><:F7B =68‵ 7@C67@ 57<@‵ 5<‵ 5;8‵ :8 B8:0‵ @<:‵ 7 ‵ 75‵ ><:‵ <@69‵ ‵ F 66‵ C67>>$ E5‵ 75‵ 7 ‵ ?8:9‵ E@E E 6‵ 5<‵ >7@B‵ <‵ 588G‵ ‵ A: B78@5‵ F 7@5 7@8B‵ C<@57@E<E 69‵ ‵ 5;8‵ A8@8: 6‵ @A68‵ <>‵ ‵ A:8 5‵ F<E@5 7@ 6<G80‵ @B‵ ?8:9‵ >8J‵ 7@ 5 @C8 ‵ C @‵ =8‵ HE<58B‵ >:<F‵ 5;8‵ 7A;‵ 6G ‵ <>‵ EC;‵ @‵ @A68‵ =87@A‵ G:8 8:?8B‵ <?8:‵ ‵ :7 8‵ <>‵ ‵ >885$

‵ B<‵ @<5‵ 5;7@I‵ 5; 5‵ 5;8‵ 588G@8 ‵ <:‵ 5;8‵ ;87A;5‵ <>‵ 5;7 ‵ C67>>‵ J<E6B‵ ; ?8‵ B858::8B‵ C67F=8: ‵ >:<F‵ 558FG57@A‵ 5<‵ C8@B‵ 750‵ 7>‵ 75‵ ; B‵ @<50‵ 7@‵ BB757<@0‵ 6<<I8B‵ <‵ :8GE6 7?869‵ F<<5;$ 8@‵ B8 G 7:8B‵ <>‵ >7@B7@A‵ @95;7@A‵ 5<‵ A: G$ <J0‵ <F8‵ <>‵ 5;8‵ B7>>7CE6578 ‵ <>‵ 5;8‵ <E5; J8 5‵ :7BA8‵ C F8‵ >:<F‵ 5;8‵ F<<5;@8 ‵ <>‵ 5;8‵ :<CI 0‵ 65;<EA;‵ 5; 5‵ :7BA80‵ 8?8@‵ >:<F‵ ‵ B7 5 @C80‵ 88F8B‵ 5<‵ =8‵ J866‵ =:<I8@‵ EG$ <J‵ FEC;‵ A:8 58:0‵ 5;8@0‵ F7A;5‵ @<5‵ ; ?8‵ =88@‵ 5;8‵ B7>>7CE659‵ <>‵ C67F=7@A‵ ‵ > C8‵ J;7C;‵ 6<<I8B‵ F<<5;‵ @B‵ E@=:<I8@‵ C6< 8‵ 5‵ ; @B‵^

‵ F<:8‵ 8:7<E‵ 677@B: @C8‵ 5<‵ F<E@57@A‵ 5;8‵ <E5; J8 5‵ :7BA8‵ 7 ‵ ><E@B‵ 7@‵ 5;8‵ B7G‵ <>‵ 75 ‵ :<CI ‵ 5<‵ 5;8‵ J8 5 <E5; J8 5$;8‵ A:8 5‵ F ‵ <>‵ 5;8‵ 558:;<:@0‵ 75‵ 7 ‵ @<J‵ J866‵ C8:5 7@8B0‵ 7 ‵ C<FG< 8B‵ <>

P ‵ G:8>8:‵ 5<‵ =8‵ <@5;8‵ >8‵ 7B8$ 9‵ 7FG:8 7<@7 ‵ 5; 5‵ @<J‵ C @@<5‵ CCL7FE6 58‵ 7@‵ 6 :A8‵ F 8 ‵ ‵ 2 `$

regularly stratified rocks,* which rise towards the east. It has been mentioned in the text, more than once, that the rocks on some portions of the ridge leading from the Col du Lion to the summit dip outwards, and that fractured edges overhang.† This is shown in the illustrations facing pp. 119 and 127; and the annexed diagram, Fig. 1, exhibits the same thing still more clearly. It will be readily understood that such an arrangement is not favourable for climbers, and that the degree of facility with which rocks can be ascended that are so disposed, must depend very much upon the frequency or paucity of fissures and joints. The rocks of the south-west ridge are sufficiently provided with cracks, but if it were otherwise, their texture and arrangement would render them unassailable.‡

Fig. 1.

Fig. 2.

It is not possible to go a single time upon the rocks of the south-west ridge, from the Col du Lion to the foot of the Great Tower, without observing the prevalence of their outward dip, and that their fractured edges have a tendency to overhang; nor can one fail to notice that it is upon this account the débris, which is rent off by frost, does not remain *in situ*, but pours down in showers over the surrounding cliffs. Each day's work, so to speak, is cleared away; the ridge is swept clean; there is scarcely anything seen but firm rock.§

* Upon this subject I beg to refer the reader to the valuable note furnished by Signor F. Giordano in the Appendix.

† See pp. 94 and 111.

‡ Weathered granite is an admirable rock to climb; its gritty texture giving excellent hold to the nails in one's boots. But upon such metamorphic schists as compose the mass of the great peak of the Matterhorn, the texture of the rock itself is of no value.

§ I refer here only to that portion of the ridge which is between the Col du Lion

;8 > C5 5; 5 5;8 F<E@5 7@7 ' C<FG< 8B <> ' 8:78 ' <> 5: 57>78B =8B ' J ' G<7@58B <E5 6<@A A<$ ' 8 E E:8 :8F :I8B 750 @B :8C<:B8B 8L!N67C7569 7@ ;7 ' ' Md QQ2 N 5; 5 5;89 Z:< 8 5< 5;8 @<:5; 8 5 5 @ @A68 <> =<E5 2 `$3 $ <:;8 '@<57C8B 75 6 < =E5 A ?8 75 ' ;7 ' <G7@7<@ 5; 5 5;8 =8B ' J8:8 Z68 ' 7@C67@8B <:' @8 :69 ;<:7S<@5 6$3 8 BB8B Z ' 8 E E:8 7 ' @< B<::;5 C<::8C5$3P ;8 5:E5; ' 5;7@I 678 ' =85J88@ 5;8 5J<$

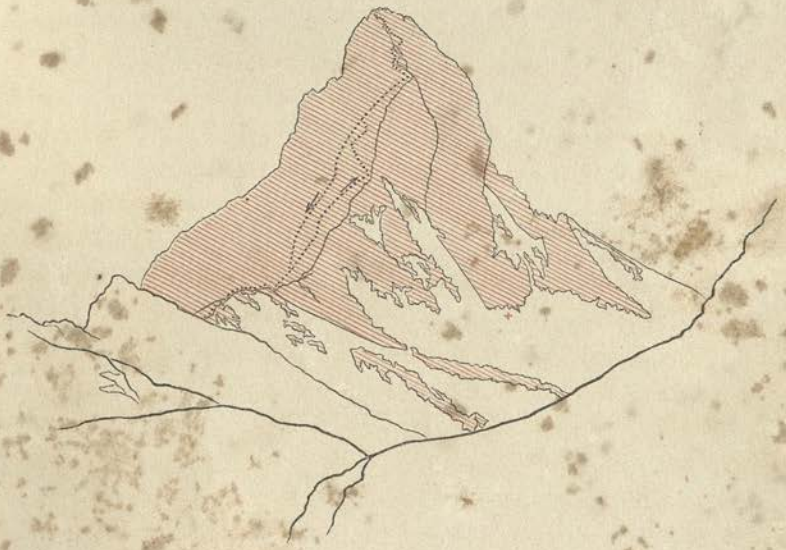
' J ' CHE 7@58B J75;' =<5;' <> 5;8 =<?8 HE<58B G A8 =E5 B7B @<5 5E:@ 5;8 I@<J68BA8 5< @9 G: C57C 6 CC<E@5 E@576 ' :8 <=D 8:?8B 5;8 F8 > C5 ><:' F9 86>$ 5 9F ' @<5 E@576 >58:' F9 :8GE6 8 7@ 5; 5 ' :8>8::8B 5;8 G8CE67 :' B7>>7CE6578 ' <> 5;8 <E5; J8 5 :7BA8 5< 5;8 B7G <> 5;8 5: 5 ' ;E5 J;8@ <@C8 G8: E B8B 5; 5 5:ECD 5E:8 @B @<5 58L5E:8 J ' 5;8 :8 6 7FG8B7F8@5 75 J ' :8 <@ =68 5< 7@>8:' 5; 5 5;8 <GG< 758 7B8 5; 5 7 ' 5< 9 5;8 8 58:@ > C8 F7A;5 =8 C<FG : 57?869 8 9$ @ =:78> 5; 5 @ :: @A8F8@5 ;<E6B =8 ><E@B 67I8 47A$ Q 7@ 58 B <> 67I8 47A$ $;7 ' 5:7?7 6 B8BEC57<@ J ' 5;8 I89 5< 5;8 C8@5 <> 5;8 558:;<:@$

;8 G<7@5 J $ ' 7B 5;8 5: 5 ' C<@57@E8 J75;' ' 7F76 :' BH:' 5;:<EA;<E5 5;8 !@<E@5 7@^ > 5;89 B7B 5;8@ 5;7 ' A:8 5 8 58:@ > C8 7@ 58 B <> =87@A ;<G868 69 7FG: C57C =68 ;<E6B =8 HE758 5;8 :8?8: 8$ @ > C5 75 ;<E6B =8 ' A:8 5@ 5E: 6 5 7:C 8 J75;' 58G ' 7@C67@7@A 7F? :B ' @B 7> 75 J8:8 <7 75 ' F<<5;' G8C5 F7A;5 =8 <> @< CC<E@5 ><:' 5;8 F 668 5 58G 7@C67@8B 7@ 5;7 ' > ;7<@ J<E6B >><:B A<<B ><<57@A$

;89 B7B <7 ' > :' ' @8 C<E6B !EBA8 >:<F ' B7 5 @C8$) ;8@ @<J >866 7@ 5;8 EF F8:' 57F8 75 =:<EA;5 <E5 6<@A 58:: C8B 67@8 ' EG<@ 5;8 F<E@5 7@ :EB869 G : 6686 5< 8 C;' <5;8:' 7@C67@8B 7@ 5;8 B7:8C57<@ ;<J@ M GG:<L7F 5869 EG<@ 5;8 >7AE:8 ' 7@ 5;8 CC<FD G @97@A G6 58 @B 5;8+ 58:@ > C8 <@ 5;< 8 <CC 7<@ J ' <>58@ J;758@8B 6F< 5 C<FG6858 69 <?8:7 J;76 5;8 <5;8:' 7B8 J75;' 5;8

@B 5;8 &:8 5 <J8:$;8 :8F :I ' J<E6B @<5 GG69 5< 5;8 :<CI ' ;7A;8:' EG M 88 G$ M ;7A;8:' 576 5;8 :<CI ' :8 >7:F A 7@ 985 ;7A;8:' MEG<@ 5;8 Z ;<E6B8:' 3M 5;89 :8 FEC;' B7 7@58A: 58B @B 5;8@ EG<@ 5;8 >7@ 6 G8 I 5;89 :8 A 7@ >7:F$
P F ' $ 2'$ $ ' ' QB 8B G$ 1$

THE MATTERHORN FROM THE SUMMIT OF THE THEODULE PASS.



THE MATTERHORN FROM THE NORTH-EAST.

THE SPACES BETWEEN THE PARALLEL RED LINES REPRESENT, ON AN AVERAGE, A VERTICAL HEIGHT OF ABOUT 90 FEET, BUT, ON ACCOUNT OF FORESHORTENING, THE HEIGHT BETWEEN THE UPPERMOST LINES IS SOMEWHAT MORE THAN THIS AMOUNT.

8LC8G57<@ <> 5678 G<JB8:8B 58: : C8 0 :8F 7@8B =6 CIK><: 5;8 @<J C<E6B @<5 :8 5 EG<@ 5;8F$

;8 ?8:9 <E567@8 <> 5;8 F<E@5 7@0 5<<0 C<@>7: F8B 5;8 C<@!8C5E:8 5; 5 75 5:EC5E:8 J<E6B 7 5 @ C8@5 <@ 5;8 8 58:@ > C80 65;<EA;' 75 <GG< 8B<@8 <@ 66 <5;8:' 7B8 $ <<I' 5 @9 G;<5<A: G;' > 5;8 G8 I'>:<F'5;8 @<:5; 8 5 M<:0 > 767@A <@80 5;8 <E567@8 > C7@A G A8 Q 0 J;7C;' 7 ' C :8>E669 5: C8B >:<F <@8N0 @B 9<E J766 88 5; 5 EG<@ 5;8 :7A;5 ; @B 7B8 M5; 5 > C7@A 5;8 +VR E55A685 C;8:N 5;8:8 7 ' @ 7@C8 @5 :8G85757<@ <> <?8:; @A7@A C67>> 0 @B <> 6<G8 ' 66 5:8@B7@A B<J@J :B '0 7@ ;<:50 5; 5 5;8 C; : C58:' <> 5;8 J;<68 <> 5; 5 7B8 7 ' 7F76 :' 5< 47A 0 G Q "1 0 @B 5; 5 EG<@ 5;8 68>5 ; @B M<:' <E5; 8 5N :7BA80 5;8 ><:F 0 ' > :' ' 5;89 A<0 :8 EAD A8 57?8 <> 5;8 5:EC5E:8 <> 47A Q ;8:8 7 ' @< B<E=5 5; 5 5;8 C<@D 5<E: ' <> 5;8 F<E@5 7@0 88@ >:<F 5;7 ' B7:8C57<@0 ; ?8 =88@ 6 :A869 7@>6E8@C8B =9 5;8 B7:8C57<@ <> 75 ' =8B $

5 J ' @<50 5;8:8><:80 >:<F ' >:8 I0 5; 5 ' 7@?758B :$ 87 / 9 5< !<7@ 7@ @ 55 CI EG<@ 5;8 8 58:@ > C80 =E5 >:<F ' A: BE 669 CD HE7:8B C<@?7C57<@ 5; 5 75 J<E6B G:<?8 5< A7?8 5;8 8 78 5 G 5;' 5< 5;8 EF F 750 @B0 7> J8 ; B @<5 =88@ <=67A8B 5< G :50 5;8 F<E@5 7@ J<E6B0 B<E=568 0 ; ?8 6+88@ C8@B8B 7@ 2$

9 AE7B8 ' :8 B769 BF7558B 5; 5 5;89 ; B =88@ A:8 569 B8C87?8B ' 5< 5;8 588G@8 ' <> 5;8 8 58:@ >;C80 J;8@ 5;89 J8:8 ; 658B 5< "6<<I' 5 75 7@ G:<>7680 ' J8 C F8 B<J@ 5;8 VR E55A685 C;8:0 <@ <E:' J 9 5< V8:F 550 =E5 5;89 J8:8 > :' >:<F' =87@A 57 >78B 5; 5 75 J<E6B 5E:@ <E5 5< =8 8 9 5< C67F=0 @B 7F8:' @B 78@8:' 8LD G:8 8B 5;8F 86?8 ' B8C7B8B69 ?8: 8 5< F I7@A @> 558FG5 EG<@ 75$ ' A ?8 J 9 58FG<: :769 =8><:8 5;87:' 8?7B8@5 :86EC5 @C80 8@B J8 F B8 5;8 <8@5 <> 5;8 ;8<B:B;<:@ 5< 8L F7@8 @ 658:@ 57?8 :<E580 J;7C;' ' 8LG8C58B J<E6B C<F F8@B 75 86 5< 5;8F' 7@ G:8>8:D 8@C8 5< 5;8 <5;8:0 ' ' A:8 5 G :5 <> 75 68B <?8:' @<J$

;8:8 7 ' @ 7F F8@ 8 AE669 7@ 5;8 558:;<:@0 J;7C;' 68 B ' EG >:<F 5;8 &6 C78:' BE <@5 8:?7@ 5< ' G<7@5 ;7A;' EG <@ 5;8

<E5; 8 58:@ :7BA80P ′G:<G< 8B 5< C8@B 5;7 ′5< 75 ′;8 B0 @B 5< C:< ′<?8:′ 5;8 <E5; 8 5 :7BA8 <@ 5< 5;8 8 58:@ > C8$;7 ′J<E6B ; ?8 =:<EA;5 E ′<@ ′68?86 J75;′5;8 =<55<F ′<>′5;8 A:8 5 @<J 6<G8 ;<J@ EG<@ 5;8 C8@5:8 <>′5;8 8 58:@ > C8 7@ 5;8 8@A: ?7@A > C7@A G$ Q $;7 ′ @<J 6<G8 J ′5< =8 C:< 8B B7 A<@ 6690 J75;′5;8 ?78 J ′<>′ ::7?7@A 5 5;8 @<J ′EG<@ 5;8 @<:5; 8 5 :7BA80 ?;7C;′7 ′ ;<J@ EG<@ 5;8 F8 8@A: ?7@A0 =<E5 ; 6> @ 7@C;′ >:<F 5;8 EF F75$;8 :8F 7@B8:′<>′5;8 C8@5 J ′5< =8 F B8 =9 5;8 =:<I8@ :<CI 0 F7L8B J75;′ @<J0 EG<@ 5;8 @<:5;′ 7B8 <>′5;8 F<E@D 5 7@$:<S C EA;5 5;8 7B8 ′7F F8B7 5869 0 @B 5;<EA;5 5;8 G6 @ >8 7=68 0 B85 76 ′J8:8 85568B0 @B J8 B8 C8@B8B 5< :876$ EC 89@850 5;8 ;E@C;= CI0 J ′EF F<@8B0 @B 8LG:8 8B ;7F 86>′ B867A;58B 5< :8 EF8 ;7 ′<6B ?<C 57<@ <>′58@5 =8 :8:0 @B 4 ?:8R′ I75C;8@ J ′<<@7@ C< F F<57<@ G:8G :7@A 5;:88 B 9 R : 57<@ 0 ><:′ ′ 7@58@B8B 5< 5 I8 5; 5 F<E@5 <>′57F8 <?8:′5;8 >> 7: K 5< 688G <@ 5;8 >7: 5 @7A;5 EG<@ 5;8 :<CI ′ 5 5;8 5<G <>′5;8 AE669 0 5< F I8 ′ GE ;′><:′5;8 EF F750 @B 5< :85E:@ 5< 5;8 58@5 <@ 5;8 8C<@B B 90 @B EG<@ 5;8 5677:B 5< C< F8 = CI 5< :876$

) 8 5 :58B 5 $2 ′$ 2 ′<@ .E@8 Q 0 @B ><66<J8B 5;8 :<E58 <>′5;8 :8E76!<C;"">P ><:′5;:88 ;<E: $) 8 J8:8 5;8@ 7@ >E66 ?78 J ′<>′<E:′AE669 0 @B 5E:@8B <>′ 5 :7A;5 @A68 ′><:′75$;8 C6< 8:′J8 GG:< C;8B0 5;8 F<:8 > ?<E: =68 B7B 75 6<<I$;8:8 J ′ ′A<<B B8 6 <>′ @<J 7@ 750 J;7C;′J ′8?7B8@569 5 ′ F 66 @A680 @B 75 88F8B ′7>′<@8 ′ 5;7:B <>′5;8 C8@50 5 68 50 J<E6B =8 ′?8:9 7F G68 F 558:$ <F8 E G7C7<E ′F :I ′7@ 5;8 @<J 5 75 ′= 8 EAA8 58B 5; 5 75 J ′@<5 >:88 >:<F > 6;@A 5<@80 0 @B0 ′ ′F8 E:8 <>′G:8C E57<@0 J8 57@@8B <>′<@ <@8 7B80 J<:I8B EG E@B8:′C<?8:′<>′5;8 C67>> 0 @B J 758B 5< 88 7>′ @95;7@A ;<E6B B8 C8@B$ ><5;7@A >866 < J8 G:<C88B8B EG 75 ′:7A;5 <:′@<:5;8:@ 7B80 <F857F8 ′CE557@A 58G ′EG 5;8 @<J ′@B <F857F8 ′F<E@57@A =9 5;8 :<CI $;<:569 =8><:8 ′$ 2 ′J8 ::7?8B 5 ′C<@?8@78@5 G6 C8 ><:′ ′; 650 @B 5<GG8B 5< :8 5 EG<@

P 5 ′G< 757<@ 7 ′ 67<J@ ′5;8 68558:′ ′<@ 5;8 :7A;5 <>′5;8 <E567@80 <@ G$ Q $ 88 6 < F G <>′5;8 558:;<:@ @B 75 ′A6 C78: $ _′ 88 G$ 1$

<F8' :<CI 0 7F F8B7 5869' C6< 8' 5<' 5;8' @<J0 J;7C;' C<F F @B8B' @' 8LC8668@5' ?78 J' <>' 5;8' AE669$

);768' 5;8' F8@' J8:8' E@G CI7@A' 5;8' ><<B' ' J8@5' 5<' ' 675568' G:<D F<@5<:9' 5<' 8L F7@8' <E:' G:<G< 8B' :<E58' F<:8' @ ::<J690' @B' 5<' BF7:8' <E:' @<=68' C<E6<7:0' J;7C;' 68B' 5: 7A;5' EG' 7@5<' 5;8' ;8 :5' <>' 5;8' F<E@5 7@' ><:' >E669' <@8' 5;<E @B' >885$ 5' 5;8@' =8@5' 5<J :B ' 5;8' @<:5;0' @B' : @' EG' 5<' 5;8' C:8 5' <>' 5;8' <E5; 8 58:@' :7BA8$ 9' CE:7< 759' J ' G7HE8B' 5<' I@<J' J; 5' J ' :<E@B' 5;7 ' C<F8:0' @B' J;76 5' ' J ' A S7@A' EG' 5' 750' @B' ><66<J7@A' J75;' 5;8' 898' 5;8' 8LHE7 75869' B: J@' CE:?8 ' J;7C;' J @B8:8B' B<J@' 5;8' @<J' 7@' 5;8' AE669'0 /' C<@?8:A7@A' 5<' '6 :A8' :E5' 7@' 75 ' C8@5:80' ' J' ' >8 J' 675568' 5<@8 ' I7BB7@A' B<J@$ ' C<@ <68B' F 9 86>' J75;' 5;7@I7@A' 5; 5' 5;89' J<E6B' @<5' 7@58:>8:8' J75;' E ' 7>' J8' B;8:8B' 5<' 5;8' 7B8$ E5' 5;8@' ' 6 :A8:' <@8' C F8' B<J@0' ' <675 :9' >866<J0 :E ;7@A' 5' 5;8' : 58' <>' 7L59' F768 ' @' ;<E:K @B' @<5;8:K @B' @<5;8:$ ' J ' E@J7667@A' 5<' : 7 8' 5;8' >8 : ' <>' 5;8' F8@' E@@8C8 :7690' @B' 7B' @<5;7@A' 5<' 5;8F$;89' B7B' @<5' ;8 :' 5;8' 5<@8 $ 7F8:' J ' 8 58B' <@' ' :<CI0 C :?7@A' 6 :A8' 67C8 ' >:<F' ' 68A' <>' FE55<@0' 5;8' <5;8: ' J8:8' C; 557@A0' @B' 5;8' >7: 5'7@57F 57<@' 5;89' ; B' <>' B @A8:' J ' >:<F' ' C: ;K ' EBB8@' :< :K J;7C;' :8?8:=8: 58B' J>E669' F<@A 5'5;8' C;>> 0 @B0 6<<I7@A' EG0 5;89' J' F 8 ' <>' :<CI 0 =<E6B8: ' @B' 5<@8 0 =7A' @B' 675568'0 B :5' :<E@B' 5;8' C<:@8:' 87A;5' ;E@B:8B' >885' <:' <' =<?8' E 0 >69' J75;' >8 :>E6' >E:9' A 7@ 5' 5;8' <GG< 758' C67>> 0 :8=<E@B' >:<F' 5;8F' A 7@ 5' 5;8' J 66 ' <@' <E:' 7B80' @B' B8 C8@B0 <F8' :7C<C;8557@A' >:<F' 7B8' 5<' 7B8' 7@' ' >: @57C' F @@8:' 0 <F8' =<E@B7@A' B<J@' 7@' 68 G ' <>' ' ;E@D B:8B' >885' <:' F<:8' <?8:' 5;8' @<J0 @B' F<:8' 5: 767@A' B<J@' 7@' ' !EF=68B0' C<@>E 8B' F 0 F7L8B' J75;' @<J' @B' 7C80' B88G8@7@A' 5;8' A:<<?8 ' J;7C;0 ' F<F8@5' =8><:80' ; B' 8LC758B' F9' BF7: 57<@$

;8' F8@' 6<<I8B' J76B69' :<E@B' ><:' G:<58C57<@0' @B0 B:<GG7@A' 5;8' ><<B0 B ;8B' E@B8:' C<?8:' 7@' 66' B7:8C57<@ $;8' G:8C7<E ' FE55<@' J ' G75C;8B' <@' <@8' 7B80' 5;8' J7@8 = A' J ' 685' > 660' @B' 75 ' C<@58@5 ' AE ;8B' <E5' >:<F' 5;8' E@C6< 8B' @8CI0 J;768' 66' ><E:' C<J8:8B' E@B8:' B8>8@B7@A' :<CI 0 8@B8 ?<E:7@A' 5<' F I8' 5;8F 86?8 ' ' F 66' ' G< 7=68$ 85' 75' @<5' =8' EGG< 8B' 5; 5' 5;87:' >:7A;5' J ' E@:8 <@

able, or that I was free from it. I took good care to make myself safe, and went and cringed in a cleft until the storm had passed. But their scramble to get under shelter was indescribably ludicrous. Such a panic I have never witnessed, before or since, upon a mountain-side.

This ricochet practice was a novelty to me. It arose, of course, from the couloir being bent, and from the falling rocks having acquired great pace before they passed the angle. In straight gullies it will, probably, never be experienced. The rule is, as I have already remarked (p. 225), that falling stones keep down the centres of gullies, and they are out of harm's way if one follows the sides.

MY TENT-BEARER—THE HUNCHBACK.

There would have been singularly little amusement, and very great risk, in mounting this gully, and we turned our backs upon it with perfect unanimity. The question then arose, "What is to be done?" I suggested climbing the rocks above us, but this was voted impossible. I thought the men were right, but would not give in without being assured of the fact, and clambered up to

85568 5;8 HE8 57<@$ @ '>8J'F7@E58 ' ' J '=:<EA;5'5<' '; 65$ 9' ><:C8 ' J8:8 C 558:8B' 0 5;8 675568' ;E@C;= CI' 6<@8 J ' C6< 869' ><6D 6<J7@A' F8K J75;' '=:< B'A:7@ EG<@ ;7 '> C80 @B'5;8'58@5' EG<@ ;7 ' ;<E6B8:0 :<S0 F<:8 =8;7@B0 J ' 5766' I88G7@A' @ 898' EG<@ =7 ' 2 C 7F8:0 ' ;E@B:8B' >885' =86<JH 5' <@ ' :<CI' J75;' ;7 ' > C8=E:78B'7@';7 '; @B '0 78778:' J '@<J;8:80 <E5'<>' 7A;5$ Z <F8' B<J@0 C<F8' B<J@03 ;<E58B' :<S 0 Z75'7 ' E 868 03 @B' '5E:@8B' 5' 68@A5;0 C<@?7@C8B' 5; 5'75' J '8?8@' ';8' 7B$;E ' F9'675568' G6 @' J ' I@<CI8B' <@' 5;8' ;8 B0 @B' J8' J8:8' 5;:<J@' = CI' EG<@' 5;8' <:7A7@ 6 C;8F8$

) 8' 5'<@C8'F B8' ' 5: 7A;5'5: CI'><:' :$ <: ;8 BR' :8E76!<C;0P' MJ;7C;' J '5;8' F< 5' B7:8C5' :<E58' 5<' 5 I8' 7@' <:B8:' 5<' A85' 5<' 5;8' <:@670' J;8:8' J8' 7@58@B8B' 5<' 688G0 G:8G : 5<:9' 5<' 55 CI7@A' 5;8' 8 58:@' > C8N0 @B' ::7?8B' EG<@ 75' EF F75' 5' Q$ ' o ') 8' J8:8' 5;8@' E@8LG8C58B69' C;88I8B$;8' G 0 '<@80 ; B'? @7 ;8B' ' @B' J8' ><E@B'<E: 86?8 ' CE5' <>' >:<F' 5;8' 4E:AA8@A685 C;8:' =9' ' F 66' =E5' G:8C7G75<E ' J 66' <' :<CI0K5;8' A6 C78:' ; B' ;:E@I' <' FEC;' 5; 5' B8 C8@5' J '7FG: C57C =68$ $'E:7@A'5;8' 6 5' ;<E:' C6<EB ' ; B' =88@' C<F7@A' EG' >:<F' 5;8' <E5;0 5;89' @<J' E::<E@B8B' E 0 @B'75' =8A @'5<' =6<J' ; :B$;8' F8@' C6E 58:8B' 5<A85;8:0 @B' B?<C 58B' 68 ?7@A'5;8' F<E@5 7@' 6<@8$ 7F8:' I8B0 J75;' F<:8' G<7@5' 5; @' G<6758@8 0 Z) ;9' B<@R' 9<E' 5:9'5<' A<' ::G ' F<E@5 7@' J;7C;' '=8' C8@B8B^3 Z 5'7 '7FG< 7=6803 C;7F8B'7@' 78@8:$ Z 7:03 7B' :<S0 Z7>' J8' C:< ' 5<' 5;8' <5;8:' 7B8' J8' ; 66' 6< 8'5;:88' B 9 0 @B'?8:9' 67I869' ; 66' @<5' ECC88B$ <7:' J @5'5<' F I8' C8@5 '7@'5;8' C; 7@' <>' <@5' 6 @C0 @B' ' =8678?8' 5;89' C @' =8' F B8$ E5' ' ; 66' @<5' =8' =68' 5<' F I8' 5;8F' J75;' 9<E'7>' ' G8@B' 5;8 8' B 9 ';8:80 ><:' ' FE 5' =8' 5' ; F<E@7L' <@' 5;8' Q15;$3 ;8:8' J ' ><:C8'7@' J; 5';8' 7B0 @B' ;7 ' J<:B ' F B8' F8' ;8 75 58$ ' :8;8B' EG<@';7 ' 5:<@A' :F ' ><:' <F8' J<:I' J;7C;' 75' J ' 8LG8C58B' J<E6B'=8' E@D E E 669' B7>>7CE65$ @<J'=8A @'5<' > 660 5; 5' 85568B'5;8' F 558:0 @B' 'A ?8'5;8' J<:B'5<' :85:8 5$) 8' J8@5' = CI'5<' :8B0 @B'<@'5<'5;8' ?766 A8'<>' (6' <E:@ @C;80 J;8:8' J8' 68G50 @B'5;8' @8L5' B 9' G:<

P' <C @<58'5<' G$ $

C88B8B$ 5<$; 5766<@0 @B$ 5;8@C8$ EG$ 5;8$? 6689$<>$ < 5 ' 5<$ <:'
F 98E:$

' C @@<5$;E5$:8A:85$ 5; 5$ 5;8$ C<E@ 86 '<>$5;8$AE7B8 'G:8? 768B$
>$:<S$; B$@<5$ E558:8B$;7 'J866 7@58@57<@8B$ J<:B 0$;8$ F7A;5$ 5766$
; ?8$=88@$67?7@A$ 8$G :58B$>:<F$E' 5$; F<E@7L$ 5$5;8$ GG<7@58B$
57F80 =E5$ =9$ ' 5: @A8$C; @C8$ J8$ F85$ A 7@$ 5$ V8:F 55$ 5;:88$
J88I '6 58:0 @B$5J<$B 9' >58:J :B' ;8$G8:7 ;8B$ =8><:8$ F9$898 '
<@$5;8$?8:9$F<E@5 7@$ >:<F$J;7C;$ J8$5E:@8B$ J 90 5$;7' B?7C80
<@$5;8$Q 5$<>$.E@8$

U T ($

(4 % ' % 4 & % ' . $

P P P Z ") ;8@ J8 J8:8=<9
) ;< J<E6B=8678?8 5; 5 5;8:8 J8:8 F<E@5 7@88:
'8J 6 GGRB67I8=E66 J;<8 5;:< 5 '; B; @A7@A 5 5;8F
) 6685 '<>68 ;1

- 9 "

? 6689<> < 5 7 '> F<E '><:75 <EHE857@ @B7@> F<E '><:
75 :857@ $;8 <@H:5857@ 587@=<<I<:=8L J '><:F8:69J7B869
B7 5:7=E58B5;:<EA;<E5 5;8 6G $ 57 '@<J'C<@>7@8B 6F< 5 8@57:8690
<: = <6E5869 5< F 66 B7 5:7C5 <@ 5;8 <E5;<> 5;8 ? 6689<>
< 5 @B>8 : '; ?8 =88@ :8G8 58B69 8LG:8 8B7@6 58 98 : '5; 5
75 J766 G88B769 =8C<F8 8L57@C5$

E5 5;8 F< 5 @AE7@8 G8: <@ B<8 '@<5 7F A7@8 5; 5 C:857@7 F
J766 =8 8: B7C 58B><: F @9 A8@8: 57<@ $ 5 7 ' EBB869 G:8 B
5;:<EA;<E5 5;8 6G '0 75 7 '=9@< F8 @ ' G8CE67 : 5< 5;8 ? 6689<>
< 5 0 =E5 @<J;8:8 B<8 ' 75 5;:E 5 75 86> F<:8 >:8HE8@569 EG<@
5;8 558@57<@<> 5;8 5: ?8668:0 @B7@@< ? 6689 J;8:8 Z 8?8:9 G:<D
G8C5 G68 8 03 7 '<@8 < <>58@ @B < G 7@>E669:8F7@B8B5; 5 Z<@69
F @7 '?768$3

5 88F ' G:8F 5E:8 5< >8 : 5; 5 5;8 =<EHE857@ J766 <<@ =8D
C<F8 8L57@C5$ 5 7 '@<5 8 9 5< 5 I8 'C8@ E '<> 5;8F0><:0 65;<EA;
5;89 ; ?8 6<C 6 ; =75 57<@ 0 75 7 ' 8L5:8F869 B7>>7CE65 5<>7@B 5;8F' 5
;<F8$ E5 5;8:8 7 ' A<<B :8 <@ 5< =8678?8 5; 5 5;8:8 :8 5 68 5
' 5766 :< F7@A <?8:5;8 F<E@5 7@ '7@5;8 @87A;=<E:;<<B <> 5;8
? 6689 '<> &:7 @C;80 ;8F8 0 ? : @C;80 @B <A@8$

5 J<E6B =8 ' G759 7> 75 J8:8 <5;8:J7 8$;89 GG8 6 5< 5;8
9FG 5;78 '<> 66 ' 5;8 :8F@ @5 '<> ' B7F7@7 ;7@A : C80 @B @<

F<7F5 7@88:' <:' 5;6857C' G8: <@' C<E6B' J75@8 ' J75;<E5' <::<J' 5;8'
8L57@C57<@' <>' @' @7F 6' G< 8 7@A' EC;' @<=68' cH E 67578 ' 0K J;7C;' '
>8J' F<@5; ' >58:' =7:5;' C @' !E F G' <?8:' ' F @R' ;8 B' 5' ' =<E@B0'
J75;<E5' 5 I7@A' ' :E@' 0 J;7C;' G 8 ' 75 ' J;<68' 67>8' 7@' ' C<@ 5 @5'
>7A;5' ><:' 8L7 58@C80 J;7C;' ; ' EC;' ' I88@' GG:8C7 57<@' <>' 5;8'
=8 E578 ' <>'@ 5E:80' @B' EC;' B7 :8A :B' <>' G 7@' 5; 5' 75' J766' Z' 5 @B' ><:'
;<E: ' 67 I8' ' 5 5E80' 7G$ 5;8' F 7B 5' <>' 5;8' =7558:8 5' 5<: F0' E@576' 5;8' 57G '
<>' 75 ' 8 : ' :8' >:<S8@3 ' @B' J 677C;0' J;8@' 75 ' 6 5' ;<E:' ::7?8 0' ZC67F= '
5<' 5;8' ;7A;8 5' F<E@5 7@ G8 I 0' ; @A ' <@' ' :<C I' J75;' 75 ' ;<:@ 0'
5J7 5 ' 75 86>' :<E@B' @B' :<E@B' EG<@' 5;8F' E@576' 5;89' :8' J<:@' <>0'
@B' 5;8@' > 66 ' B<J@' @B' 8LG7:8 ' 3' 'P' ?8@' C;EB7' ;77@ 86>' C 66 '
5;7 ' 5<:9' J<@B8:>E6$ 8' F 9' J866' B<' <$ ' B7 C6 7F' =8;8>' 7@' 750'
K5;8' =<EH57857@' 7 ' 5<' <' >7@8' ' =8 5' 5<' 7@BE6A8' 7@' EC;' @57C $

<:59 >7?8' I88G8: 0' 868C58B' >:<F' 5;8' F< 5' =68' C; 8E: ' <>' 5;8'
B7 5:7C50' AE :B' 75 ' ; E@5 $;87:' 5 I' 7 ' @<5' ' 67A;5' <@80'$ 65;<EA;'
5;89' :80' @ 5E: 669 0' CHE 7@58B' J75;' 5;< 8' J;<' :8' F< 5' 67 I869' 5<'
558 F G5' G< C;7@A$ >' 5;89' J8:8' J75;B: J@0' 75' J<E6B' @<5' =8' 6<@A'
=8><:8' 5;8' 7=8L' J<E6B' =8' @' 8L57@C5' J76B' @7F 60' <' > :' ' 5;8'
6G ' :8' C<@C8:@8B$;8' G 7<@' ><:' I7667@A' < F85;7@A0' @B' 5;8'
G:8 8@5' ? 6E8' <>' 5;8' =8 5' 75 86>0' J<E6B' <<@' 68 B' 5<' 75 ' 8L58:F7@ D
57<@$ <:' ' F8 5' 6<@8' 5;8' =<EHE857@' 7 ' ? 6E =680' 5;8' A:< '
J87A;5' <>' <@8' 5; 5' 7 ' >E66' A:<J@' F<E@57@A' >:<F' ' 5<' Q ' 6= ' 0'
J;768' 75 ' I7@' @B' ;<:@ ' :8' J<:5;' ^+U' @B' EGJ :B 0' CC<:B7@A' 5<'
C<@B757<@' @B' B7F8@ 7<@ $

@' G758' <>' 5;8' I88G8: 0' @B' <>' 5;8' 8?8:8' G8@ 6578 ' J;7C;' F 9'
=8' 7@>67C58B' ><:' I7667@A' ' =<EHE857@0' G< C;7@A' <CCE: ' C<@ 5 @569$
U@<J7@A' 5; 5' 5;7 ' J ' 5;8' C 80' ' 7@HE7:8B' 5' < 5 0' EG<@' F 9' 6 5'
?7 750' 7>' @9' I7@ ' <:' ;<:@ ' J8:8' ><:' H680' @B' 7@' 58@' F7@E58 ' J '
5 I8@' 7@5<' ' A ::85' J;8:8' 5;8' :8F 7@ ' <>' ' G68@B7B' =8 5' J8:8'
C<@C8 68B0K ' F A@7>7C8@5' F 680' G:8 EF8B' 5<' =8' F<:8' 5; @' 5J8@59'
98 : ' <6B0' ' 75 ' F 7?8' ;<:@ ' ; B' 5J8@59 5J<' F<:8' <>568 ' 5:<@A69'
F :I8B' I@<==9' :7@A $;8' 8L5:8F8' 68@A5;' <>' 5;8' I7@0' >:<F' 5;8'
57G' <>' 5;8' @< 8'5<' 5;8' 8@B' <>' 5;8' 5 B0' J ' ' F85:8' ' C8@57F85:8

□' C;EB7R' ' ' ' ' '

(about 5 feet 7 inches),* and from the ground to the top of its back had been, apparently, about 77 centimètres. It is rare to meet with a bouquetin of these dimensions, and the owner of this skin might have been visited with several years' imprisonment if it had been known that it was in his possession.

THE BOUQUETIN.

The chase of the bouquetin is properly considered a sport fit for a king, and his Majesty Victor-Emmanuel, for whom it is reserved, is too good a sportsman to slaughter indiscriminately an animal which is an ornament to his dominions. Last year (1869)

* Probably stretched in skinning.

8?8@588@' >866' 5<' ;7 ' AE@' 5' <@8' ;7FB:8B' 9 :B ' @B' EGJ :B $ @'
' ;7 ' !8 59' G:8 8@58B' ' >7@8' G8C7F8@' 5<' 5;8' 5 67 @' 6!N7@8'
6E=$;8' F8F=8: ' = @MGE858B0' ' =8678?80' EG<@' 75 ' >68$;0 @B' 5;89'
; ?8' ; B' 5;8' I7@' 5E>>8B0' @B' 85' EG' 7@' 5;87:' :C!<F ' 5' < 5 $ 5'
7 ' 7B' =9' C<@@<7 8E: ' 5<' =8' = B69' 5E>>8B0K5; 5' 75' 7 ' @<5' =:< B'
8@<EA;' 7@' 5;8' C;8 50' @B' 7 ' 5<<' 6 :A8' =8;7@B$ 5766' 75' 6<<I ' J866'
G:<G<:57<@8B0' 65;<EA;' 75' 88F ' F B8' ><:' ; :B' J<:I' : 5;8$:' 5; @' ><:'
>8 5 ' <>' A76759$ 4:<F' 5;7 ' G8C7F8@' 5;8' CC<FG @97@A' 8@A: ?7@A'
; ' =88@' F B8$

5' 7 ' ' >E66 A:<J@' F 680' =<E5' 5J86?8' 98 : ' <6B0' @B' 7>' 75' 5<<B'
EG:7A;5' J<?BB' F8 E:8' ' >885' f' 7@C;8 ' >:<F' 5;8' A:<E@B' 5<' 5;8'
= 8' <>' 75 ' ;<:@ $ 5 ' 8L5:8F8' 68@A5;' 7 ' 2' >885' 1' 7@C;8 $ 5 '
;<:@ ' ; ?8' 868?8@' J866 F :I8B' :7@A 0' =8 7B8 ' <@8' <:' 5J<' > 7@569 '
F :I8B' <@8 0' @B' :8' MF8 E:8B' :<E@B' 5;87:' CE:? 5E:8N' 2f' C8@57D
F85:8 ' 7@' 68@A5;$;8' ;<:@ ' <>' 5;8' G8C7F8@' :8>8::8B' 5<' <@' G$ Q M'
MF8 E:8B' 7@' 5;8' F8' J 9N' ; B' ' 68@A5;' <>' <@69' ' C8@57F85:8 0'
65;<EA;' 5;89' J8:8' <:@ F8@58B' J75;' @8 :69' B<E=68' 5;8' @E@7;8:' <>'
:7@A 0' @B' J8:8' G:8 EF =69' <>' B<E=68' 5;8' A8' <>' 5;8' ><:F8:$P

;8' I88G8: 0' @B' 5;8' C; 8E: ' <>' 5;7 ' B7 5:7C50' @<5' <@69' 9' 5; 5'
5;8' :7@A ' EG<@' 5;8' ;<:@ ' <>' 5;8' 7=8L' 5866' 75 ' A8' M8 C;' <@8' :8CI<@D
7@A' ' ' 98 :N0' =E5' 5; 5' 5;8' ; 6> B8?86<9N8B' <@8 0' J ;7C;' <F857F8 '
:8' ?8:9' >88=69' F :I8B' 7@B88B0' $;<J' 5; 5' 5;8' @7F 6' ; ' E>>8:8B'
>:<F' ;E@A8:' BE:7@A' 5;8' J7@58:$ 5E: 67 5' :8' C8G57C 6' EG<@' 5;7 '
G<7@50 =E5' 7@ FEC;' ' 5;89' <>>8:' @<' =8558:' :8 <@' A 7@ 5' 5;8' :8D
GE58B' > C5' 5; @' 5;8' @ 57?8 ' B<' 7@' 75 ' > ?<E:' M<@8' 97@A' 5; 5' 75' 7 '
@<5' <0' @B' 5;8' <5;8:' 97@A' 5; 5' 75' 7 ' <N0' J8' F 90' G8:; G 0' =8' G8:D
F7558B' 5<' C<@ 7B8:' 75' @' <G8@' HE8 57<@$ ' C @' <@69' 9' 5; 5' 7>' 5;8'
> 7@569 F :I8B' :7@A ' B<' B8@<58' 98 : ' <>' > 7@7@80' 5;8' 57F8 ' ><:' 5;8'
=<EHE857@' :8' ?8:9' ; :B' 7@B88B' 0 7@C80' 7@' F< 5' <>' 5;8' ;<:@ ' JR;7C;'
' ; ?8' 88@0' 5;8' 68 8:' :7@A ' ; ?8' =88@' ?8:9' @EF8:<E 0' @B' <F8D
57F8 ' F<:8' G68@57>E6' 5; @' 5;8' G:<F7@8@5' <@8 $

P :$ U7@A0' 7@ 77 ') ' 1 ' &' $ ' ' 9 0' Z' @' 5;8' G 7:' M<>' ;<:@ N' '
G< 8 0' J;7C;' :8' 9 % '6<@A0' 5;8:8' :8' 87A;5' <>' 5;8 8' IR8 :69' :7@A $3' 5' J<E6B' 88F0'
5;8:8><:8' M7>' 5;8' :7@A ' :8' @@E 6' <@8 N0' 5; 5' 5;8' F L7FEF' 68@A5;' <>' ;<:@' 7 ' 55 7@8B'
5' ' C<FG : 57?869' 8 :69' A8$ "

;8 ;8 <> 5;8 I88G8: ' MJ;< !EBA8 ' =9 5;8 =<?8 F8@57<@8B 7@B7C 57<@ N 5866 ' F8 5; 5 5;8 7=8L @<5 E@>:8HE8@569 ::7?8 ' 5 >;8 A8 <> 5;7:59 98 : @ @B <F857F8 ' 5<><:59 <: ><:59 >7?8$ 8 9 5<<0 5; 5 75 7 ' @<5 ><@B <> 5: ?8: FA 588G @<J0 @B 7@ B8 C8@B7@A ' C<E6<7:; 5; 5 7 '>7668B J75;'750 J766 S7A S A B<J@0 =9 G:7@A7@A>:<F <@8 7B8 5< 5;8 <5;8:0 7@ 68 G '<>>7>59 >885 5 '57F8 ' .8 @ 7:: S0P 5;8 J<:5;9 6 @B6<:B <> 5;8 <586 BE <@5 6 @C 5 < 5 'MJ;< ; ' ; B <GG<:5E@7578 ' <> <= 8:?7@A 5;8 @7F 6 C6< 869N0 E:8 ' F8 5; 5 5 5;8 A8 <><E:<:>7?8 F<@5; ' 75 C @ 8 769 C68 : ' ;87A;5 <>@7@8 <: 58@ >885 5 ' =<E@B

<@A 67?8 5;8 ;<EHE857@ @B 6<@A F 9 75 ' C; 8 G:8 8:?8 5;8 ;8 65;' <> 5;8 F<E@5 7@88:7@A I7@A0 (7C5<: F F @E86$ <@A 67>8 5< 5;8 ;<EHE857@ ' ;E5 B<J@ J75;' 5;8 C:857@

;8 G8CE67 :' ><: F <> 7B7<C9 J;7C;' 7 ' C 668B :857@7 F'!P 7 ' < 677A;69 B8?86<G8B 7@ 5;8 (6689 <> < 5 0 @B 5;8 @ 57?8 ' :8 < > F767 :7 8B J75;' 750 5; 5 5;89 :8 6F< 5 7@B7A@ @5 J;8@ 5;8 E:D G:7 8B 5: ?8668:' :8F :I '75 '>:8HE8@C9$ @8 7 'C<@57@E 669 :8F7@B8B 5; 5 75 7 '@<5 G8CE67 :' 5< 5;8 ? 6689 @B 5; 5 5;8:8 :8 C7B57@ ' 86 8D J;8:8$ 5 7 ' 5<< 5:E8 5; 5 5;7 ' 58::7=68 C<E:A8 7 ' J7B8 G:8 B 5;:<EA;<E5"5;8 6G ' @B <?8:' 5;8 J<:6B0 @B 5; 5 5;8:8 :8 G6 C8 ' J;8:8 5;8 G:<G<:57<@ <> C:857@ ' 5< !+<GE6 57<@ 7 0 <:' ; ' =88@0 8?8@ A:8 58:' 5; @ 7@ 5;8 (6689 <> < 5 0 =E5 ' ; ?8 @8?8:' 88@0 <:' ;8 :B <>0 '? 6689 < >8:5768 @B < C; :F7@A0 <> <@8 J;7C; K G :5 >:<F C:857@7 F K68 ?8 ' < A:88 =68 @7FG:8 7<@ EG<@ 5;8 J 9D > :8:0 J;8:8 8HE 6 @EF=8: ' :8 :8BEC8B 5< ' C<@B757<@ J;7C;' @9 :8 G8C5 =68 G8 F7A;5 B8 G7 8$

;8 J;<68 E=!8C5 <> C:857@7 F 7 ' E::<E@B8B J75;' B7>>7CE659$;8 @EF=8:' <> 5;< 8 J;< :8 >>67C58B =9 75 7 ' E@I@<J@ 0 75 ' CE:8 7 ' B<E=5>E60 @B 75 '<:7A7@ 7 ' F9 58:7<E $ 5 ; ' GESS68B 5;8 F< 5

P .8 @ 7:: S J ' 5678 68 B7@A AE7B8 <> 5678 6 58 6=8:5 F75;'<@ ' C868=: 58B C8@5 <> <@5 6 @C$

_ Z :857@7 F' F 9 =8 6<<I8B EG<@ ' =87@A 5;8 ;7A;8 5 5 A8 <> B7<C90 65;<EA;' 75 B7>>8: ' >:<F 750 7@ ; ?7@A ' ?757 58B 5 58 <> 5;8 =<B90 7@ C<@!E@C57<@ J75;' 5;8 6< ' <> 5;8 > CE6578 ' <> 5;8 F7@B$;E ' 75 7 ' C<FG< 8B <> 5J< B7 57@C5 868F8@5 0K5;8 <@80 B7<C90 5;8 <5;8:0 = B ; =75 <> =<B9$3K 6 CI780 ' ' G0 $

acute observers, and every general statement in regard to it must be fenced by qualifications.

It is tolerably certain, however, that the centre of its distribution in the valley of Aosta is about the centre of the valley. The city of Aosta itself may be regarded as its head-quarters. It is there, and in the neighbouring towns of Gignod, Villeneuve, St. Vincent, and Verrex, and in the villages and upon the high-road between those places, that these distorted, mindless beings, more like brutes than men, commonly excite one's disgust by their hideous, loathsome, and uncouth appearance, by their obscene gestures, and by their senseless gabbling. The accompanying portrait of one is by no means overdrawn—some are too frightful for representation.

A CRÉTIN OF AOSTA.

How can we account for this particular intensity towards the middle of the valley? Why is it that crétins become more and more numerous after Ivrea is passed, attain their highest ratio and lowest degradation at or about the chief town of the valley, and then diminish in numbers as its upper termination is approached? This maximum of intensity must certainly point to a cause, or to a combination of causes, operating about Aosta, which are less powerful at the two extremities of the valley; and if the reason for it could be determined, the springs of crétinism would be exposed.

The disease would be even more puzzling than it is if it were confined to this single locality, and the inquirer were to find not

F8:869' 5; 5' 75' J ' 6F< 5' E@I@<J@' EG<@' 5;8' G6 7@ ' 5<' 5;8' 8 5' @B' 7@' 5;8' B7 5:7C5 ' 5<' 5;8' J8 5D' ;E5' 5; 5' 5;8' ? 6689 ' : B7 57@A' @<:5;' @B' <E5;' >:<F' 5;8' F 7@' ? 6689' J8:8' G: C57C 669' E@ >>8C58B' =9' 75$ 4<:' 75' 7 ' ' :8F :I =68' C7:CEF 5 @C8D J;7C;' ; ' 55: C58B' 5;8' @<57C8' <>' 66' J;<' ; ?8' G 7B' 558@57<@' 5<' C:B57@7 FD 5; 5' 5;8' @ 57?8 ' <>' 5;8' 5:7=E5 :9' ? 6689 ' :8' 6F< 5' >:88' >:<F' 5;8' F 6 B9' D K 5; 5' G8<G68' <>' 5;8' F8' : C8D G8 I7@A' 5;8' F8' 6 @AE A8D =:8 5;7@A' 5;8' F8' 7:D 8 57@A' 5;8' F8' ><<BD @B' 67?7@A' 5;8' F8' 67>8D 8@!<9' 6F< 5' 8@57:8' 7F FE@759' >:<F' 75D J;768D 5' 5;8' B7 5 @C8' <>' ' ?8:9' >8 J' F768 D 5;<E @B ' <>' <5;8: ' :8' C<FG6858 69' 7@' 75 ' G<J8:$

' G : 6686' C 8' 7 ' ><E@BD;<J8?8:D <@' 5;8' <5;8:' 7B8' <>' 5;8' 8@D @7@8' 6G $;8' ;<@8' ? 6689' 7 ' 6F< 5' 8HE 669' B7 >7AE:8B' =9' C:857@7 FD @B' 7@' 75D 5<<D 5;8' 8L5:8F7578 ' <>' 5;8' ? 6689' :8' 67A;569' >>8C58B' C<FG :8B' J75;' 5;8' 7@58: F8B7 58' B7 5:7C5 K G :57CE6 :69' 5;< 8' =85J88@' :78A' @B' 5$ E:7C8$P' ;7 ' 8C<@B' 8L FG68' 5:8@A5;8@ ' 5;8' C<@?7C57<@' 5; 5' 5;8' A:8 5' B8?86<GF8@5' <>' C:857@7 F' 7@' 5;8' F7BB68' <>' 5;8' ? /89' <>' < 5 ' 7 ' @<5' 5;8' :8 E65' <>' CC7B8@5 6' C7:CEF 5 @C8 $

5' J ' ><:F8:69' EGG< 8B' 5; 5' C:857@7 F' :< 8' >:<F' 5;8' ; =75E 6' B:7@I7@A'<>' @<J' @B' A6 C78: J 58:$ '8' E E:8'<GG< 8B' 5<' 5;7 ' C<@!8C5E:8' 5;8' > C5 D 5; 5' 5;8' B7 8 8' J ' 8@57:869' E@I@<J@' G:8C7 869'7@' 5;< 8' G6 C8 ' J;8:8' 5;8'7@; =75 @5 ' J8:8' F< 5' B8G8@B8@5' EG<@' 5;8 8' I7@B ' <>' J 58:D @B' 5; 5' 75' J ' F< 5' C<FF<@' J;8:8' EC;' J ' @<5' 5;8' C 8' 0K5; 5' 5;8' ;7A;' ? 6689 ' J8:8' E@5 7@58BD J;768' 5;8' 6<J' <@8 ' J8:8' 7@>8C58B$+P' ;8' @<57<@' 88F ' 5<' ; ?8' G:<C88B8B' >:<F' C:B57@ ' =87@A' C<@><E@B8B' J75;' G8: <@ ' J;<' J8:8' F8:869' A<75:8B' D <:D 5' 68 5D >:<F' 5;8' EGG< 757<@' 5; 5' A<75:8' J ' @' 7@C7G78@5' 5 A8' <>' C:857@7 F$

&<75:8D 75' 7 ' @<J' J 866' C8:5 7@8BD 7 ' 7@BEC8B' =9' 5;8' E 8' <>

P' 5' J ' 5 58B' '>8J' 98 : ' A<' 5; 5' <@8' 7@' 5J8@59 >7?8' <>' 5;8' @ 57?8 ' <>' 5;8' @D 5<@' (6 7 ' MJ;7C;' 7 ' C;78>69' <CCEG78B' =9' 5;8' ? 6689' <>' 5;8' EGG8:' ;<@8M' J8:8' C:857@ $;7 ' J<E6B' A7?8' =<E5' ' 5<' 5;8' C @5<@$' 5' 5;8' F8' 57F8' 5;8' ? 6689' <>' < 5 ' C<@5 7@8B' =<E5' Q ' C:857@ $

5' 1 ' ' '$5' 'd $

C;8F7C 669'7FGE:8' J 58:0 @B' 8 G8C7 669' ; :B' J 58:'0 @B' 5;8' 7@D ?8 57A 57<@ '<>'? :7<E'<= 8:?8:' ; ?8'B7 C<?8:8B'5; 5'A<75:8' ; ' @' 7@57G7 58' C<@@8C57<@' J75;' C8:5 7@'A8<6<A7C 6'><:F 57<@ $P' @' ; :D F<@9' J75;'5;8 8' > C5 0'75' 7 '><E@B'5; 5' 7@> @5 ' :8' 86B<F'=<:@' J75;' A<75:8 0'=E5'5; 5' 5;89' B8?86<G' ' 5;8' C;76B' A:<J ' EG'0 5; 5' 5;89' J766' <F857F8 ' GG8 :' @B'B7 GG8 :'>:<F' F8:8' C; @A8'<>' 6<C 6759' @B'5; 5'75'7 'G< 7=68'5<'G:<BEC8'5;8F'7@58@57<@ 669$

5'7 '@<5' <'C8:5 7@'5; 5'5;8'C E 8 'J;7C;'G:<BEC8'A<75:8' ;<E6B' =8':8A :B8B' 'C E 8 '<>'5;8'G:<BEC57<@'<:' F 7@58@ @C8'<>'C:857@7 F$ 5'7 '5:E8'5; 5' C:857@ ' :8'?8:9'A8@8: 669'A<75:<E 0'=E5'75'7 ' 6<' 5:E8'5; 5'5;8:8' :8'58@ '<>'5;<E @B '<>'A<75:<E ' G8: <@ ' J;<' :8' 8@57:869'>:88'>:<F' 66'5: C8 ' <>' C:857@7 F$ %<5!<@69' <0'=E5'5; 5' 5;8:8' :8' B7 5:7C5 ' 7@'5;8' 6G 0' @B' <E5 7B8'<>'5;8F'M8?8@'7@' <E:' <J@'C<E@5:9N0' J;8:8'A<75:8'7 '@<5' : :80'=E5'J;8:8'5;8'C:857@'7 'E@D I@<J@$ 5F0':8A :B7@A'5;8' 8?76' 5 58' <>'=<B9' J;7C;'68 B '5<' A<75:8' '=87@A0'G< 7=690'7@' 667 @C8'J75;'C:857@7 F0'75'J766'@<5'=8' 7::868? @5'5<'A7?8'5;8'><:F8:'B7 8 8' '675568' F<:8' 558@57<@'=8><:8' C<@57@E7@A'5;8'C<@ 7B8: 57<@'<>'5;8' F 7@' E=!8C5$

@'5;7 'C<E@5:9'5;8'G< 8 7<@'<>' A<75:8'7 'C<@ 7B8:8B' 'F7 D ><:5E@8' : 5;8:'5; @' <5;8:J7 80' @B'7@B7?7BE 6 ' J;<' :8' >>67C58B' J75;'5;8 8' GG8@B A8' 558FG5'5<'C<@C8 6'5;87:' ; F8$ @'5;8' 6G '75'7 'HE758'5;8':8?8: 8$ @'4: @C80' 5 690' @B' J75S8:6 @B0' 75'7 ' 'G< 757?8' B? @5 A8'5<'=8'A<75:8B0' '75' 8CE:8'8L8FG57<@' >:<F'F7675 :9' 8:?7C8$ 'A<75:8'7 ' '5;7@A'5<'=8'G:7S8B0'8L;7=758B0' !N:8 8:?8BK+75'7 'J<:5;' <'FEC;' ; :B'C ;'0 @B'75'7 ' @'E@HE8 D 57<@ =68'>C5'5; 5'5;8'G8:G85E 57<@'<>'5;8'A:8 5'A<75:<E ' > F769' 7 ' 7 58B'=9'5;7 '?8:9'C7:CEF 5 @C8$

);8@' ?<9'J ' @@8L8B'5<'4: @C80'5;8' BF7@7 5: 57<@'5<<I' 5<CI'<>'5;8' :8 <E:C8 ' <>'75 ' @8J' 58::75<:90' @B' <<@' B7 C<?8:8B

P' ':$ <>> 5'C<FFEE7C 58B' 'G G8:' <@'5;7 ' E=!8C5' 5'5;8'6 5'M 1 N' F8857@A'<>' 5;8' :757 ;' <C7 57<@' 5' 7?8:G<<60'7@' J;7C;' ;8' 5 58B';8' ; B' C8:5 7@8B'5; 5'7@' ' :=<@7>8:<E ' B7 5:7C5'A<75:8' J 'G:8? 68@50' @B'5; 5'75' J ' = 8@5' <@'%8J' 8B' @B 5<@8$

5'&<75:8'7 ' 8@B8F7C' 5' :7 @ <@0' @B'>:8HE8@559' >>8C5 0'58FG<: :7690'5;8' <6B78:' J;<' :8' 5 57<@8B'7@'5; 5'><:5:8 $; =: @B'M 'B<C5<:'<>' :7 @!<@N' 9 '5; 5'@<'68

5; 5f 65;<EA;' 5;8' C:8 ' J8:8' F @9f 5;8' C<@ C:7G5 ' J<E6B' ;8' >8J$;8' A<?8:@F8@5' ;8 577 8B' 75 86>' 5<' F8@B' 5;7 ' 5 58' <>' >> 7: f @B' >58:' ::7?7@A' 5' 5;8' C<@C6E 7<@' 5; 5' A<75:8' J ' G:<BEC8B' =9' B:7@ I D 7@A' ; B' J 58:' M @B' 5; 5' 75 ' G:<BEC57<@' J ' G:<F<58B' =9' <557 ;' @B' =8 57 f ; =75 Nf 5<<I' F8 E:8 ' 5<' C68 @ 8' 5;8' ?766 A8 f 5<' @ 69 8' 5;8' J 58: ' M7@' <:B8:'5<' G<7@5' <E5';< 8' J;7C;' ;<E6B'@<5' =8' B: @INf @B' 5<' A7?8' 5<' C;76B:8@' J;<' C F8' 5<' C;<<6 6<S8@A8 ' C<@D 5 7@7@A' F 66' B< 8 ' <>' 7<B7@8$ 5' 7 ' 7B' 5; 5' <E5' <>' ' A<757R<E ' C;76B:8@' J;<' J8:8' <'5:8 58B'7@' 5;8' C<E: 8' <>' 87A;5' 98 : f Q ' J8:8' CE:8Bf @B' 5;8' C<@B757<@' <>' Q ' <5;8: ' J ' 7FG:<?8B'f @B' 5; 5'5;8' @EF=8:' <>' CE:8 ' J<E6B' ; ?8' =88@' A:8 58:' 7>' 5;8' G :8@5 ' Z' ; B' @<5' <GG< 8B' 5;8' C :8' <>' 5;8' A<?8:@F8@5f F' ' ' ' $ ' ' ' &' 6 ' & ' ' . A'@' ;8 8' =8@7A;58B' C:8 5E:8 ' :8>E 8B' 5;8' : ; 6R ' =>65<@' @B'G:8>8::8B' 5;87:' Z J 6685 ' <>' >68 ;' 3>' %<' J<@B8:' 5; 5' 5;8' :8>85' ><:' E58 ?<78' G:<G< 8 ' 5; 5' A<75:<E ' G8: <@ ' ; 66' @<' 6<@A8:' =8' G:7?768A8B$ 85' ;7F' A<' > :5;8:f @B' <=5 7@' ' B8C:88' 5; 5' 66' <>' 5;8F' C G =68' <>' =8 :7@A' :F ' ; 66

5; @' <@8'7@' 5J8@59 >7?8' <>' 5;8' F8@' <>' 5;8' 25;':8A7F8@5' <>' 7@> @5:9f J;<' J8:8'7@' A ::7D <@' 7@' +,KJ' =8C F8' A<75:<E ' BE:7@A' 5;87:' 5 9$;7 ' :8A7F8@5' C F8' >:<F' 8:G7A@ @f J;8:8' 5;8' B7 8 8' 7 ' @<5' C<FF<@Y$K && ' ' * ' 02 ' :7 f 2f G$ $ P 678' E= 5 @C8' <>' 5;7 ' G : A: G;' 7 ' 5 I8@' >:<F' 5;8' " 2 ' ' 2 ') ' =><$ f $

5' 6 CI78' 9 '5; 5' Z' ' :$ <55 :B' F8@57<@ ' 5;8' C 8' <>' ' < C 668B' A<75:8' J866' @8 :' $ 5$ .E678@@8f 7@' E:78@@8f 5;8' J 58:' <>' J;7C;' 8@C:E 58B' 5;8' 5:88 ' 7@' 5;8' ?7C7@759' J75;' 67F8f @B' 5;8' E 8' <>' J;7C;' G:<BEC8B' A<75:8' 7@' ' C<EG68' <>' F<@5; ' f @B' ;8' F8@57<@ ' >7?8' 9<E@A' F8@' J;<' ; B' ?<6E@5 :769' B:E@I' 75 ' J 58:f @B' G:<BEC8B' A<75:8f 7@' <:B8:' 5<' =8' >:8@>:<F' F / 75 :9' 8:?7C8$3

; =: @Bf 7@' 5;8' G FG;685' 6:8 B9' HE<58Bf !" f Z 5' 7 ' B8G6<: =68' 5; 5' 9<E@A' G8<G68' J;<' ; ?8' ' J8667@A' <>' 5;8' 5;9:<7B' A6 @B' M7@' 5;8' :7 @!<@@ 7 Nf > :'>:<F' 8@D B8 ?<E:7@A'5<' A85' :7B' <>' 75f <CCEG9' 5;8F 86?8 ' <@69' J75;' F I7@A' 75' =7AA8:f 7@' <:B8:' 5<' 8 C G8' F7675 :9' 8:?7C8$ G8C7 669' ' 5;8' 57F8' <>' B: J7@A' >:<' 5;8' C<@ C:7G57<@' GG:< C;8 f B<' 5;89' E 8' 8?8:9' F8 @ ' EGG< 8B' 5<' =8' C G =68' <>' G:<BEC7@A' A<75:8f B:7@I' FEC;' J 58:f 5 I8' ¢ 9 'R J75;' =E:B8@ ' 3' M<@' 5;87:' ;8 B ' ^N ¢¢ @B' 57A;58@' 5;8' C: ? 5' =<?8' 5;8' J8667@A$ $ $ $ 4:<F' 2Q' 5<' 21' 7@C6E 7?8f ' 7@' ' <=D 5 7@8B' 8L8FG57<@' <@' CC<E@5' <>' A<75:8' 7@' 5;8' ' 8G :5F8@5' <>' 5;8' 7A;' 6G $3' ;8' F8' J:758:' G6 C8 ' 5;8' @EF=8:' <>' A<75:<E ' G8: <@ ' 7@' 4: @C8' 5' 2 0 f @B' <>' C:857@ ' 5' 0 '5<' 2 0 $

=8' 7F F8B7 5869' B: >58B' 7@5<' 5 ; 8' :F9$ 85' 5 ; 8 F' =8' ><: F8B' 7@5<' :8A7F8@5 ' =9' 5 ; 8 F 86?8 0' =:7A B8B' 5<A85 ; 8:0' @B' C< F F @B8B' =9' C:857@ $;7@ I' J ; 5' ' ' '5 ; 89' J<E6B' ; ?8' ') ;<' C<E6B' 5 @B' A 7@ 5' 5 ; 8 F' ^) ;<' J<E6B' E@B8: 5 @B' 5 ; 87:' 5 C57C '^ 8' J<E6B' ?8' ;7 ' 7<B7@80' @B' J<E6B' :8@B8:' @' C5' <>' !E 57C8' 5<' 5 ; 8' @<@ A<75:8B' G<GE6 57<@$;8' E=!8C5' 7 ' J<:5 ; 9' <>' 8:7<E ' 558@57<@$ >' A<75:8' 7 ' :8 669' @' 669' <>' C:857@7 F0' 5 ; 8' <<@8:' 75' 7 ' 8: B7C 58B' 5 ; 8' =8558:$P

' 8' E E:8' E= 575E58B' ; 8 5' @B' 5 A@ 57<@' <>' 7:' '5 ; 8' C E 8' <>' C:857@7 F' 7@' 5 ; 8' G6 C8' <>' = B@8 '<>' J 58:$ E5' 5 ; 7 ' J ' <@69' A7?7@A' EG' <@8' E@ 57 > C5<:9' 8LG6 @ 57<@' ><:' @<5 ; 8:' 8HE 669' E@D 58@ =68' 0 @B' 7@C8' 5 ; 8:8' :8' G6 C8 '> :' ;<558:' @B' J 75 ;' G8:@7C7<E ' 5F< G ; 8:8 ' J ; 8:8' 5 ; 8' B7 8 8' 7 ' E@I@<J@0' J ; 768' <@' 5 ; 8' <5 ; 8:' ; @B0' 5 ; 8:8' :8' 75E 57<@ ' 7@' J ; 7C ;' 75' 7 ' C<F F<@' J ; 8:8' 5 ; 8' ; 8 5' 7 ' @<5' 8LC8 7?80' @B' J ; 7C ;' 8@!<9' '>:8869' C7:CE6 57@A' 5F< G ; 8:80' ; 7 ' EFG57<@' F 9' =8' 85' 7B8' ' 7@ E>>7C78@5' 5<' CC<E@5' ><:' 5 ; 8' C:857@7 F' <>' 5 ; 8' (6689' <>' < 5 $ @B' 7@' :8A :B' 5<' 75 ' G :57CE6 :' C 80' 75' F 9' =8' HE8 57<@8B' J ; 85 ; 8:' 5 ; 8:8' 7 ' @95 ; 7@A' F<:8' 5 ; @' @' 7F A7@ :9' 5 A@ 57<@' <>' 7:' $ 4<:' F9' <J@' G :50' ' 55:7=E58' 5 ; 8' <GD G:8 7<@' J ; 7C ;' 5: @A8: ' 9' 5 ; 89' >8860' 7@' 5 ; 8' F7BB68' <>' 5 ; 8' ? 6689 0' @<5' 5<' 5 A@ 57<@' <>' 7:' =E5' 5<' = 8@C8' <>' ; B<J0' 7@' C<@ 8HE8@C8' <>' 5 ; 8' ? 6689R' C<E: 8' =87@A' 8 5' 5<' J 8 5C @B' =8678?80' 5 ; 5' 7>' 5 ; 8' ><:C8' <>' 5 ; 8' J7@B' J8:8' <= 8:?8B' @B' 8 57F 58B' CC<:B7@A' 5<' 5 ; 8$ F85 ; <B ' 7@' C<F F<@' E 80' 75' J<E6B' =8' ><E@B' 5 ; 5' 5 ; 8:8' 7 ' @<' B8>7D C78@C9' <>' F<57<@' 7@' 5 ; 8' 7:' 5 ; :<EA ; <E5' 5 ; 8' 8@57:8' 98 :$ 8?8: 6' 5<J@ ' @B' ?766 A8 0' F<:8<?8:0' J ; 8:8' C:857@ ' :8' F< 5' @EF8:<E 0' :8' G6 C8B' 5' 5 ; 8' 8@5: @C8 ' <>' ? 6689 ' @B' EG<@' 868? 58B' 6<G8 0' J 75 ;' =E@B @5' @ 5E: 6' > C767578 ' ><:' B: 7@ A8K>:80' >:<F' F 6 :7 0' J ; 7C ;

P' Z' &<75:<E ' G8: <@ 0' 8L8F G5' >:<F' F7675 :9' 8:?7C80' :8F 7@' 7@' 5 ; 87:' F 57?8' B7 +' 5:7C5 0' F @90' @B' 5 ; E ' C E 8' 5 ; 8' B7 8 '5<' =8C<F8' ; 8:8B75 :9$ >0' <@' 5 ; 8' C<@5: :90' 5 ; 89' J8:8' B: J@0' @B' J8:8' 8@5' 7@5<' E@5 7@58B' B8G :5F8@5 ' MG :57CE6 :69' 5 ; < 8' EG<@' 5 ; 8' 8 C< 5N0' 5 ; 89' J<E6B' :85E:@' G8:>8C569' CE:8B' 5' 5 ; 8' 8LG7: 57<@' <>' 5 ; 87:' 587" F' <>' 8:?7C8$ 4E:5 ; 8:0' 7>' A<75:<E ' G8: <@ ' J8:8' @<5' 8L8F G50' 'A:8 58:' @E F=8:' <>' ; 8 65 ; 9' 7@B7??BE 6 ' J<E6B' :8F 7@' 5' ;<F 80' J<E6B' F ::90' @B' J<E6B' =8C<F8' G :8@5 ' <>' <E@B' @B' ?7A<:<E ' C ; 76B:8@$3K &E9' @B' ' A @B$

6# 7 / * ' " "(' 8 *"

67 ' =88@' EAA8 58B' ' CC<E@57@A' ><:' 5;8' C:5757@7 7@' <>' 5;8' ;<@8'
? 6689$

5;8:' ; ?8' 7F A7@8B' 5; 5' 7@58FG8: @C80P' G<<:' ;?7@A0' ><E6'
; =75 0' @B' G8: <@ 6' E@C68 @67@8 0' <J' 5;8' 88B ' <>' C:857@7 F0' @B'
5;7 ' <G7@7<@' 7 ' 8@57568B' 5<' >E66' C<@ 7B8: 57<@$ @58FG8: @C8' <>'
B7?8: ' I7@B ' 7 ' >:E75>E6' 7@' 5;8' G:<BEC57<@' <>' 7@ @7590>' @B' ;8:B7@A'
5<A85;8:' 7@' >765;9' BJ8667@A 0' J75;' 675568' <:' @<' ?8@576 57<@0' F 9' G< D
7=69' B858:7<: 58' $ O2 E' ' FEC;' ' 8L5:8F8' 7@BE6A8@C8' F 9' 5;8'
F7@B$;8 8' 7B8 ' :8' G<GE6 :69' 8@58:5 7@8B' =8C E 8' C:857@ ' :8'
F<:8'@EF8:<E ' F<@A 5'5;8'6<J8:'<:B8: '5; @' F<@A 5'5;8'J866 5< B<'
C6 8 $ 85'5;89' FE 50' 8 C;' @B' 660'=8' :8A :B8B' '7@ B8HE 58'5<'
CC<E@5' ><:' 5;8' B7 8 80' 5B6'68 '5<' 8LG6 7@' 75 ' 8LC8 ' 7@' 5;8' C8@5:8'
<>'5;8' ? 6689$ 4<:' 7@' 5;8 8' :8 G8C5 ' 5;8:8' 7 ' 675568' <:' @<' B7 57@C57<@'
=85J88@' 750' 5;8' 5J<' 8L5:8F7578 0' @B' 5;8$@87A;=<E:7@A' B7 5:7C5 $

' C<@!8C5E:8' :8F 7@ ' 5<' =8' C<@ 7B8:8B' :8A :B7@A' 5;8' <:7A7@' <>'
C:M 57@7 F0' J ;7C;' 7 ' >6< 57@A'7@' 5;8' F7@B ' <>' F @9'G8: <@ ' M 65;<EA;'
75' 7A' 86B<F' 8LG:8 8BN0' J ;7C;' C ::78 ' JB5;' 75' @' 7:' <>' G:<= =76759'
5; 5'7 ' J @57@A' 7@' 5;8' <5;8:' 8LG6 @ 57<@ 0' @B' J ;7C;' 7 ' EGG<:58B'
=9' BF7558B' > C5 $

;8' >8:576759' <>'5;8' (6689' <>' < 5 ' 7 ' G:<?8:=7 6$ 5' 7 ' C<?8:8B'
J75;'?7@89 :B ' @B' C<:@ >786B 0 >6<CI ' @B' ;8:B ' =<E@B'7@' 7 5 0 @B'
75 ' F7@8: 6' :8 <E:C8 ' :8' A:8 5$;8:8' 7 ' 8@<EA;' @B' 5<' G :8' =<5;'
><:' F @' @B' =8 5$;8:8' :8' G<<:' 7@' 5;8' ? 6689' ' 5;8:8' :8'
8?8:9J;8:8' =E5' 67>8' 7 ' <' > :' 8 9' 5; 5' 5;89' :8' @<5' B:7?8@' 5<' 88I'
><:' E= 7 58@C8' 7@' <5;8:' G6 C8 0' @B' :8F 7@' >:<F' A8@8: 57<@' 5<

P' @' 7@ 5 @C8' J ' F8@57<@8B' 5<' F80' 7@' 0' <>' ' F 66' G:<G:785<:' 7@' 5;8' (6689'
<>' < 5 0' J;<' ; B' ' J7>8' @B' 8?8: 6' ;8!65;9' C;76B:8@0' ; ?7@A0' ECC8 7?869' 5J<' A<<B'
98 :' J75;' ;7 ' ?7@8 $ 8' 58' @B' B: @I' 5;8' G:<C88B ' EG0' 7@ 58 B' <>' ;7: ; @B7@A' ;7 '
:8 <E:C8 0' @B' 7@' 5;8' 5J<' ><66<J7@A' 98 : ' 5J<' C:857@' C;76B:8@' J8:8' ;<:@' 5<' ;7F$
8?8: 6' 7@B77>8:8@569 A<<B' 98 : ' ; ?8' ECC88B8B' 7@C8' 5;8@0' ;8' ; ' =88@' <=67A8B' 5<'
67?8' >:EA 669' @B' ; ' ; B' 8?8: 6' F<:8' C;76B:8@0' 66' <>' J ;<F' :8' ;8 65;9$;8'
G :8@5 ' :8' GG :8@569' >:88' >:<F' 66' 5 7@5' <>' C:857@7 F$
5' 88' ':$ <=8:5' ;:7 57 <@' ' ' &' $ ' = ' ' ' &' $ ' 4 3 ' &'
) ' ' 0' ':$ BJ :B' . :?7 ' ' $ ' 2 ' &') ' ' 0' @B'
8G<:5 ' <>'5;8' <F F7 7<@8:' 7@' 7F C9$]

Q'

A8@8: 57<@ :<<58B 5< 5 ; 87:' @ 57?8 <76$; 8 6 :A8 @E F=8: ' <> G8: <@ '
J ; < :8 ><E@B 7@' 5 ; 7 ' ? 6689 ; ?7@A 5 ; 8 F8 E:@ F8 ' 7 ' ' G:<<>
<> 5 ; 8 J866 I@<J@ > C5 5 ; 5 5 ; 8 : 8 7 '675568 <:' @< 8F 7A: 57<@ >:<F' 5 ; 8
? 6689 @B 5 ; 5 5 ; 8 : 8 7 ' @7@B8>7@758 F<E@5 <> 7@58: F ::7 A8 =8D
5J88@ 5 ; 8 @ 57?8 $ 5 7 ' C<@!8C5@:8B 5 ; 5 5 ; 8 C<@57@E @C8 <> 5 ; 8 8
C<@B757<@ ' 5 ; :<EA ;' ' 6<@A G8:7<B ; ' :8@B8:8B 5 ; 8 G<GE6 57<@ F<:8
<:' 68 ' C<@ @AE7@8<E @ @B 5 ; 5 J8 88 7@ C:857@7 F' @ 8L FG68
EG<@ ' 6 :A8 C 68 <> 5 ; 8 8?76 8>>8C5 ' <> 667 @C8 ' <> I7@B:8B$
;7 ' 8LG6 @ 57<@ C<F F8@B ' 75 86> =9 :8 <@ <> 75 ' A8@8: 6
GG67C =76759 5< C:857@7 F$;8 B7 8 8 7 ' C<F F<@69 ><E@B 7@
? 6689 <@ 7 6 @B 0P <:' 7@ <5 ; 8 :' C7:CEF C:7=8B :8 7@ J ; 7C ;' C7:D
CE6 57<@ 7 ' :8 5:7C58B <:' 5 ; 8 7@ ; =75 @5 ' :8 @<@ F7A: 5<:9 @B 75
7 ' : :8 <@ G6 7@ J ; 8:8 C<F FE@7C 57<@ ' :8 >:88$ 5 J 6 5 <@C8
=8 I8B Z) ; 90 5 ; 8@ :8 @<5 5 ; 8 5:7=E5 :9 ? 6689 ' <> 5 ; 8 ? 6689 <>
< 5 ' >E66 <> C:857@ ' ^3 ;8 @ J8:' 7 5 ; 5 5 ; 8 8 6 58: 6 ? 6689 '
:8 C<FG : 57?869 58:B8 @B :8 E@ =68 5< EGG<:5 ; 87:' G<GE6 D
57<@ >:<F' 5 ; 87:' 7@58:@ 6 :8 <E:C8 $ 7A8 @EF=8: ' @@E 669 68 ?8
@B B<@<5 :85E:@0K <F8 C<F8 = CI ; ?7@A ><:F8B 667 @C8 ' 86 8D
J ; 8:8$;8:8 7 ' ' C<@ 5 @5 C7:CE6 57<@ P @B 7@5:<BEC57<@ <> @8J'
=6<<B$ ' F' @<5 J :8 5; 5 5 ; 8:8 :8 :85E:@ ' 5< ;<J' 5 ; 8 8L58@5
5< J ; 7C ;' 5 ; 7 ' A<8 ' <@ =E5 5 ; 8 > C5 7 ' @<5<:7<E $>

P ' :$ 6 CI78 A7?8 ' 5 ; 8 :8F :I ; 68 7@ 5 @C8 <> Z 5 ; 8 7 6 @B <> 8BJ<:5 ;' M; 78B8: '
J<:5 ; ^N @8 :' <;68@C8 J ; 8:8 5 ; 8 7@ ; =75 @5 ' ;<6B @< C<@@8C57<@ J 75 ; ' 5 ; < 8 <@
;<:8 @B C<@ 8 ,7@8@569 7@58: F ::9 C<@ 5 @569 J 75 ;' <@8 @<5 ; 8:$3 ;7 ' 7 6 @B
CC<:B7@A 5< ' :$ 6 CI78 ; B @<68 ' 5 ; @ 2 ' C:857@ ' <E5 <> ' G<GE6 57<@ <> 1 $
_' ;8 C 8 <> 5 ; 8 (6 8 7 ' 7 ' @<5 5:7C569 7@ G<7@5 7@C8 75 7 ' @<5 ' 5:7=E5 :9 <>
5 ; 8 (6 BR < 58 ;E5 75 F 9 ; 8 HE<58B 5< ;<J' 5 ; 8 8L58@5 5< J ; 7C ;' 5 ; 7 ' F7A: 57<@
A<8 ' <@$:$ U7@A 9 7 Z ;8 G<GE6 57<@ <> 5 ; 8 J ;<68 (6 8 7 ' =87@A 8 57F 58B
5 0 7 75 7 ' 8?7B8@569 E558:69 E@ =68 5< F 7@5 7@ ' 575 ; 8"<> 5 ; 5 @EF=8:' >:<F' 75 '
<J@ :8 <E:C8 $;8 @8C8 :9 "8 E65 7 ' :8+6 :' G8:7<B7C 6 F7A: 57<@ <> 66 5 ; 8 =68 '
=<B78B @B' C57?8 F 68 ><:' ? :97@A 68@A5 ; ' <> 57F8 7@5< B7>>8:8@5 G :5 ' <> E:<G8$
$ $ $ ' '6 :A8 @EF=8:' <> 5 ; 8 5< J @ ' <> 5 69 @B 4: @C8 ' &8@< 76 @ E:7@ @B
8?8@ :7 :8 EGG678B J 75 ;' @ 7F F8@ 8 7@>6EL' <> I7668B 6 =<E:8: ' @B :57>7C8: '
>:<F' 5 ; 8 (7$ 87@8 7B8 ' <> 5 ; 8 8L58@5 <> 5 ; 7 ' F7A: 57<@ F 9 =8 ><: F8B >:<F' 5 ; 8
> C5 5 ; 5 ' (6 8 7 @ ' 68 ?8 5 ; 87:' ;<F8 ' @@E 669 F @9 <> 5 ; 8 F' ><:' 98 : $3K '
) ' 1 ' &$ ' ' G 1 $

;7 C<@!8C5E:8 8LG6 7@ > :=8558:5; @5;8<5;8:AE8 8 J;9 75 7 5; 5 C:857@7 F ; < 5:<@A ;<6B EG<@ 5;8 6<J8:C6 8 J;768 75 68 ?8 5;8 EGG8: <@8 6F< 5 E@5<EC;8B >:<:5;8 ><:F8: :8 F< 5 67I869 5 7@58:F @9 J75; G8<G68 <> 5;87: <J@ B7 5:7C5 J;76 5 5;8 6 558: :8 E@B8:@< <:5 <> C<FGE6 7<@ 7@ 5;7 :8 G8C5$ 5 A7?8 C6E8 5<< 5<5;8 :8 <@ <> 5;8 G :57CE6 :7@58@ 759 7@ 5;8 C8@5:8 <>5;8 ? 6689$;8 7@; =75 @5 <>5;8 6<J8:8L5:8F759 C<FD FE@7C 58 @B F7L J75;5;8 E@5 7@58B BJ8668: <@ 5;8 G6 7@ J;76 5 5;8 C<@B757<@ 5 5;8 EGG8:8L5:8F759 GG:<L7F 58 5<5;< 8 <>5;8 6 58: 6 ? 6689 $ 8><:8 5;7 8LG6 @ 57<@ J766 =8 A8@8: 669 :8C87?8B C6< 8:C<@@8C57<@ J766 ; ?8 5<=8 8 5 =67 ;8B=85J88@5;8 EF8B C E 8 @B 5;8 G:8 EF8B 87>8C5$P CC8G57@A 75 @8?8:5;868 G:<= =68 @B :8 <@ =68 <@80 685 E @<J C<@ 7B8: J; 5 G:< G8C5 5;8:8 7 <>C;8CI7@A 5;8 G:<A:8 <>5;8 B7 8 8$

5 7 <>C<E: 80 7FG< 7=68 5<C; @A8 5;8 ; =75 <>5;8 @ 57?8 <>5;8 ? 6689 <> < 5 EBB8@690 @B 75 J<E6B G:<= =690 =8 ?8:9 B7>>7CE65 5<C E 8 @9 6 :A8 F<E@5 <>8F7A: 57<@ <:7F F7A: 57<@$ @5;8 G:8 8@5 8F= :: 8B C<@B757<@ <> 5 67 @ >7@ @C8 5;8:8 7 ?8:9 F 66 C; @C8 <> @9 F8 E:8 <>5;8 <:5=87@A E@B8:5 I8@ 7> 75 J<E6B 7@?<6?8 C<@ 7B8: =68 8LG8@B75E:8$;8 <G8@7@A <> : 76J 9>:<F ?:8 5< < 5 F7A;5G< 7=69=:7@A =<E50 7@ @ 5E: 6 J 90 F<:8 F<?8F8@5 5; @ J<E6B =8 G:<F<58B =9 @9 68A7 6 57<@0 @B =9 5;7 F8 @ ;5;8 ; GG78 5 8>>8C5 F7A;5=8 G:<BEC8B$!P

;8:8 7 675568 ;<G8 <> G: C57C 6 :8 E65 >:<F 558FG5 5< CE:8

P 5F 9=8F8@57<@8B0 '67@I'7@5;8'8?7B8@C80 5; 5;8' 8G :5F8@5 <>5;8 E58 6G8 MJ;7C;C<@5 7@ G:<B7A7<E @EF=8:<> C:857@ M ; 0 CC<:B7@A 5< ;7G E650 6 :A8:G:<G<:57<@ <> B8 > @B BEF=G8: <@ 5<75 G<GE6 57<@5; @ @9 <5;8:B8G :5D F8@5 <>4: @C80 ?7S$ 7@2 $;8 8G :5F8@5 <>5;8 8 9:8@88 C<F8 @8L50 J75;7@ 11$

5 Z $ F;E58 E M :8>85 <>5;8 8G :5F8@5 <>5;8 7FG6<@0 E@B8:5;8 >7: 5 % G<68<@M @B $ 4<B8:8 E:8F0 5; 5 5;8 C6< 8 <>6 5 C8@5E:9 5;8 @EF=8:<> C:857@ 7@5;8 @5<@ (6 7 B7F7@7 ;8 5< ?8:9 A:8 5 B8A:88$;8 ><:F8: 55:7D =E58B5;7 F867<: 57<@ 5<5;8 8F= @I F8@5 <>5;8 ;<@80 @B 5;8 B: 7@7@A <>5;8 F :;8 0 5<5;8 C68 :7@A <>5;8 6 @B 0 @B 5;8 C<@ 8HE8@5 C; @A8 7@ 5;8 C; : C58:<> 5;8 7@; =75 @5 0 J;< =8C F8 F<:8 7@BE 5:7<E @B C57?80 @B 68 A7?8@ 5< A6E55<@9 @B B:E@I8@@8 $;8 6 558: E5;<: :5;8: 7FGE58B 75 5<5;8 <G8@7@A <>5;8 A:8 5

C:857@ $ @C8 ' C:857@0 9<E :8 6J 9 ' <@8$P ;8 8LG8:7F8@5 ' <> 5;8 6 58 ' :$ &EAA8@=/;6 B8F<@ 5: 58B 5; 5 <F8 + ^- C:+57@ ' F 9 8?8@ =8C<F8 E 8>E6 F8F=8: ' <> <C7859 7> 5;89 :8 5 I8@ 7@ ; @B 8 :69 7@ 67>8 0 =E5 5;89 B7B @<5 ;<J ' 5; 5 5;8 @ 5E:8 <> 5;8 5:E8 <: C<FG6858 C6857@ C<E6B =8 658:8B$Y # 8 8 98B 5< F<B7>9 <F8 <> 5;8 F76B8 5 >: F ' <> C:857@7 F0 =E5 B7B @<5 5:7I8 5 5;8 :<<5 <> 5;8 8?76$ > >7>59 &EAA8@=E;6 ' J8:8 5 J<:I ' 7@ 5;8 7@A68 ? 6689 <> < 5 0 5;89 J<E6B 5 I8 8?8: 6 A8@8: 57<@ ' 5< G:<BEC8 @ GG:8C7D =68 8>>8C50 @B 5;89 J<E6B @8?8: 8L57:G 58 5;8 B7 8 8 <6<@A ' 75 ' <E:C8 ' J8:8 E@ 768B$

<: J766 5;8 ;<E 8 J;7C;' ; ' =88@ =E765 5 <5 [' 5< C<@5 7@ Q ' C:857@ =8AA : ' B< FEC;0 E@68 ' 5;8 7@F 58 ' :8 :8 5: 7@8B >:<F G8:G85E 57@A 5;87: <J@ B8A: B 57<@$?8@ 5;8 6<J8 5 59G8 ' <> C:857@ ' F 9 =8 G:<C:8 57?80 @B 75 7 ' 7B 5; 5 5;8 E@67F758B ;=8:59 J;7C;' 7 ' 66<J8B 5< 5;8F ; ' C E 8B 7@>7@758 F7 C;78>$ ' 6 :A8 G:<G<:57<@ <> 5;8 C:857@ ' J ;< J766 =8 =<:@ 7@ 5;8 @8L5 A8@8: 57<@ J766 E@B<E=58B69 =8 <>> G:7@A <> C:857@ G :8@5 $ 5 7 ' 5: @A8 5; 5 86> 7@58:8 5 B<8 ' @<5 68 B 5;8 @ 57?8 ' <> < 5 ' 5< G6 C8 5;87: C:857@ ' E@B8:' EC;' :8 5:7C57<@ ' ' J<E6B G:8?8@5 5;87:' 76;<75 7@58:D C<E: 8 0 @B 75 7 ' 5766 F<:8 E:G:7 7@A 5< >7@B 5;8 5;<67C ;E:C;' C5E 669 68A 67 7@A 5;87:' F ::7 A8$;8:8 7 ' <F85;7@A ;<::7=69 A:<58 HE8 7@ 5;8 7B8 ' <> '' 5;8 E@7<@ <> ' =: C8 <> 7B7<5 ' 0

G ' <> 5;8 7FG6<@0 @B C<@ 8HE8@5 F<:8 8 9 C<F FE@7C 57<@ J75;' <5;8:' C<E@5:78 0 5;8 G8<G68 =87@A 5;E '5 <:8 7@C758B 5< =8 57:' 5;8F 86?8 03 85C$0 6 CI780 G$ $;7 ' 58 57F<@9 >:<F' E5;<: ' J;< ;86B 5<5 669 B7>>8:8@5 <G7@7<@ ' ' 5< 5;8 <:7A7@ <> C:857@7 F0 7 ' 5:<@A69 C<@>77F 5<:9 <>'5;8 C<@!8C5E:8 6 5 B? @C8B$

P Z' 8 C:857@7 F ' C;8?8 8 5 7@CE: =680 RB5 5 G;9 7HE8 85 7@58668C5E86 B8 ' C:8 ' 57@8EL' 85 B8 ' B8F7 C:857@ ' 8 5 E C8G57=68 BR F867<: 57<@ G :' E@5 758F8@5 C<@?8@ ' =680 B8 ' <7@ ' 85 8BEC 57<@0 F 7 ' ! F 7 ' <@ @8 G<E:: ' > 7:8 BR8EL' B8 ' ;<F F8 ' C<FG685 ' <E ' 68 : GG<:5 G;9 7HE80 F<: 60 85 7@58668C5E86$3K &E9 @B ' A @B <@ ' ' '% ' ' '! 2 =!

_' &:8 5 8LG8C5 57<@ ' J8:8 : 7 8B <F8 98 : ' A< =9 5;8 :8G<:5 ' <> ' :$ &EAA8@=E;60 @B =9 5;< 8 <> ?7 75<: ' 5< ;7 ' 8 5 =67 ;F8@5 <@ 5;8 =8@B=8:A0 5 @58:6 C;8@0 =E5 5;89 ; ?8 =88@ B7 GG<7@58B0 @B 5;8 7@ 575E57<@ 75 86> ; ' =88@ C6< 8B$

5 5 5;8 8LG8@ 8 <> <F8 E@I@<J@ C; :75 =68 G8: <@$ 8 7B8 ' 5;7 ' 8 5 =67 ;D F8@50 5;8:8 7 ' @ ;< G75 6 5 < 5 0 =86<@A7@A 5< 5;8 <:B8:' <> 5$ E:7C8 85 S :80 C<@5 7@7@A 5J86?8 =8B ' >:' C:857@ C;76B7 8@$

@ 7@C 75 7 J 866 I@<J@ 5 ; 5 5 ; 8 B7 8 8 7 ; 8 : 8B75 : 90 @ B8?86<G 7@ ECC8 7?8 A8@8 : 57<@ 5 ; 8 > C5 5 ; 5 EC ; F : : 7 A8 : @C57<@8B 7 C @B 6<E @B 7@> F<E $P

; 8 EGG690 5 ; 8 : 8><: 80 7 I 8G5 EG >: < F 5J <E : C8 $; 8 >7 : 5 C<@57@A8@5 7 B8 : 7?8B >: < F GG : 8@569 ; 8 65 ; 9 G : 8@5 0 5 ; 8 8C<@B0 =9 7@ ; 8 : 75 @C8 >: < F B7 8 8B G8 : <@ $; 8 <: 7A7@ <> 5 ; 8 >7 : 5 7 <= CE : 80 @B =8><: 8 75 HE<5 C @ =8 CE5 <>0 <: 8?8@ B7F 7@7 ; 8B0 5678 F 9 58 : 9 J ; 7C ; 8@?86<G8 75 F E 5 =8 B7 7G 58B$; 8 : 8 F 8B9 ><: 5 ; 8 8C<@B 7 <=?7<E 0 @B 7 7@ 5 ; 8 ; @B <> 5 ; 8 E5 ; <: 7578 K G : 57CE6 : 69 7@ 5 ; < 8 <> 5 ; 8 C68 : A9$: : 7 A8 F E 5 =8 G : < ; 7=758B 5 / J ; : 8 >>8C58B0 5 ; 8 F < 5 8L5 : 8 F 8 C 8 F E 5 =8 G6 C8B E@B8 : 8 5 : 7@50 @B C : 857@ J ; < 8 <: 7A7@ 7 7668A757 F 58 F E 5 =8 E=!8C5 5 B7 =767578 $ <5 ; 7@A ; < : 5 <> 5 ; 8 B<G57<@ <> 5 ; 8 8 F8 E : 8 J 766 F 885 5 ; 8 C 8$ / 868 75 J 766 =80 < 6<@A 5 ; 8 G : E@ : 9 <E : C8 <> 5 ; 8 B7 8 8 : 8 E@5<EC ; 8B0 5< =E76B ; < G75 6 0 5< C68 @ 8 B J 8667@A 0 5< J 7B8@ 5 : 885 0 <: 5< 558 F G5 F 66 F 867<: D 57<@ <> 5 ; 8 <C7 6 C7 : CE F 5 @C8 <> 5 ; 8 @ 57?8 $ 66 <> 5 ; 8 8 5 ; 7@A 8 A<<B 8@<EA ; 7@ 5 ; 8 F 86?8 0 =E5 5 ; 89 : 8 J ; <669 7F G<58@5 5< 8>>8C5 : B7C 6 C ; @A8$

%< 57 > C5<: 9 C<@C6E 7<@ J 7 / =8 : : 7?8B 5 : 8A : B7@A 5 ; 8 <: 7A7@ <> C : 857@7 F E@576 5 ; 8 G8B7A : 88 <> 6 : A8 @E F=8 : <> 8L F G68 ; ?8 =88@ 5 : C8B$; 8 @E F 8 : 7C 6 58 5 7 5 ; 8 <@69 <@8 J ; 7C ; 7 67 I 869 5< B7 C<?8 : 5 ; 8 : 8 ; 59$; 8 @8C8 : 9 7@HE7 : 78 : 8 =89<@B 5 ; 8 G<J8 : <> G : 7? 58 G8 : <@ 0 @B 5 ; 87 : GE : E75 J 766 =8 ><E@B E>

P 5 ; <776B =8 5 58B0 5 ; 5 <F8 <> 5=8 C68 : A90 5 68 50 : 8>E 8 5< E@758 5 ; 8) <: 5 I7@B <> C : 857@ $; ?8 ; 8 : B 75 7B0 ; <J 8?8 : 0 5 ; 5 66 : 8 @<5 <G : 57CE6 : 0 @B0 A 7@0 <5 ; 8 : ; ?8 5<6B F 8 5 ; 5 C : 857@ : 8 68A 669 F : : 78B 7@ 5 ; 8 ? 6689 <> < 5 $ 7F A7 ; 8 5 ; 8 5 : E5 ; 5< ; 80 5 ; 5 <F8 <> 5 ; 8 G : 78 5 : 8 C : EGE6<E 0 @B 5 ; 5 <5 ; 8 : 8 @<5$; 8 8?7B8@C8 <> 5 ; 8 @ 57?8 EG<@ 5 ; 7 E=!8C5 J < C<@>67C57@A0 5 ; 5 GG678B 5< 5 ; 8 @<@ : : 86 ME > < 5 N ><: 7@><: F 57<@$ 7 @ J 8 : J E>>7D C78@569 8LG67C75 5< 5 ; 8 CE 5<F 0K Z 9 B8 C : 857@ AE7 G : 68@5 ?88 E@8 C8 : 5 7@8 7@58667A8@C80 85 HE7 <@5 C G ; 68 BR GG : 8@B : 8 HE86HE8 ? 8 : 759 85 HE86HE8 @<57<@ @8C8 7 : 8 EL B8?<7 <C7 EL$ 8EL C7 C<@5 : C58@5 HE86HE8><7 F : 7 A8$ WE @5 C8EL HE7 <@5 7@58667A8@C8 5 : 58 <=5E 80 <@ @8 68E : G8 : F 85 G 68 F : 7 A80 HE<7HER6 GE7 8@5 8@C<: 8 8@A8@B : 8 : C8 HE7 578@5 G6E B8 6 6<7 @ 5E : 8668 HE8 B8 6 6<7 C7?768$Y

>7C78@569' B7>>7CE65 =9' <>>7C7 6 7@?8 57A 5<: $ &:8 5 :86EC5 @C8' J 766 =8' 8L;7=758B' 5<' B7 C6< 8' 5;8' 7@><:F 57<@' J;7C;' ;<E6B' =8' <EA;50 @B' 5;8' C<F F<@' C:9' J 766 C8:5 7@69' =8' : 7 8B0 5; 5 EC;' C:E57@9' 7 ' J 75;D <E5' A8@8: 6 B? @5 A80 @B' 7 ' G 7@>E6 5<' G:7? 58' >8867@A $ E50 7@' F 558: ' J;7C;' >>8C5 F @I7@B' 7@' A8@8: 60 7@B7?7BE 6 >8867@A ' FE 5 6J 9 ' =8' E=<:B7@ 58B' 5<' 5;8' GE=67C 7@58:8 50 @B' 7>' 5;8' 5:E5;' 7 ' 5<' =8' ::7?8B' 5' 7@' :8A :B' 5<' C:857@7 F0 5;8' G:<58 5 ' <>' 5;8' 7A@<: @5 J 766 ; ?8' 5<' =8' <?8::7BB8@$

75;8:5<0 5;< 8' J;<' ; ?8' J:7558@' EG<@' 5;8' B7 8 8' ; ?8' C<@D >7@8B' 5;8F 86?8 0 6F< 5' 8LC6E 7?8690' 5<' AE8 7@A' 5' 75 ' <:7A7@' 0 @B' CCE: 58' B 5 0 >:<F' J;7C;' <E@B' B8BEC57<@ ' C @' =8' F B80 :80 ' =8678?80 8@57:869' J @57@A$P' F ' ;<J8?8:0 :8' @<5' 7@' ' G< 757<@' 5<' 5 E@5' <5;8: ' J75;' @8A68C5' <>' 7@HE7:9$' @69' ' >8J' F<@5; ' A<' 5;8' <E 8' <>' <F F<@ ' :8!8C58B0 =9' ' C<@ 7B8: =68' F !<:7590 ' G:<G< 7D 57<@' 5; 5' J ' B8 7A@8B' 5<' 5;:<J' 67A;5' EG<@' 5;8' C E 8 ' <>' 7B7<C90 @B' 5;8' <GG<@8@5 ' <>' 5;8' J<:B ' J;7C;' 75' J ' <EA;5' 5<' 7@5:<BEC80 65;<EA;' 5:7C569' G :67 F8@5 :9' 7@' 5;87:' :AEF8@5 ' @B' 6 @AE A80 >><:B8B' ' B8G6<: =68' G:<<>' 5; 5' C:857@7 F' 7 ' @<5' E@I@<J@' 7@' <E:' <J@' C<E@5:9$+

:857@7 F' 7 ' 5;8' 68 5' A:88 =68' >8 5E:8' <>' 5;8' ? 6689' <>' < 5 0 =E5' 75' 7 0 5' 5;8' F8' 57F80 5;8' F< 5' 5:7I7@A$ 5' ; ' =88@' 5<EC;8B' EG<@' ><:' 5;8' I8' <>' 75 ' ;EF @' 7@58:8 50 @B' <@' CC<E@5' <>' 5;< 8' E@; GG9' =87@A ' J;<K +GE@7 ;8B' =9' 5;8' 8::<: ' <>' 5;87:' > 5;8: K :8' G<J8:68 ' 5<' ;86G' 5;8F 86?8 ' 0K 5;8' >7: 5' 7A;5' <>' J;<F' G:<BEC8B' EC;' @' 7FG:8 7<@' EG<@' 5;8' F< 5' 8 :@8 5' <>' 66 6G7@8' J:758: 0 5; 5' ;8' B8C6 :8B0 7@' ' 5J7C8 :8G8 58B' 8LG:8 7<@0 75 ' :8C<668C57<@' J<E6B' @8?8:' =8' 8>> C8B' >:<F' ;7 ' F8F<:90!

5' <F8' ?8:9' :8F<58' G8:7<B' 5;8' ? 6689' <>' < 5 ' J ' <CCEG78B

P' 4<:' >E:5;8:' 7@><:F 57<@' EG<@' C:857@7 F0 88' 5;8' J<:I ' <>' 48::E 0 %78GC80 4 =:80' $ 8AE7@0 %9 5:<F0 <:860 85C$

>' '8= 58' <@' 5;8' 8@E ' 766 <@' 5;8' F<57<@' =9' 7:' .<;@' E==<CI' 5<' 7@ 8:5' 5;8' J<:B ' Z' J;85;8:' F ::78B' 5<' '>7: 5' C<E 7@$3' ;8' <GG<@8@5 ' <>' 7:' .$ E==<CIR' F<57<@' ;<E6B' :8 B' ;7G E65' !2 ' ' ' ' '2 $:7 0 $

5' '8' E 77:80 dd 20 $

=9 ? 5 A6 C78: J ;7C=7 >6<J8B B<J@ 75 8@57:8 68@A5; >:<F <@5 6 @C 5< 5;8 G6 7@ <> 78BF<@50 :8F 7@8B 5 57<@ :90 <: @8 :69 <0 5 75 F<E5; ><: F @9 C8@5E:78 0 @B B8G< 758B 5;8:8 8@<:F<E F 8 <> B8=:7 $;8 68@A5; <> 5;7 A6 C78: 8LC88B8B F768 0 @B 75 B: 7@8B = 7@ Q 5< F768 C:< 0 =<E@B8B =9 5;8 ;7A;8 5 F<E@5 7@ 7@ 5;8 6G $ 5 B7B @<5 >7 / 5;7 = 7@0 ;6875;8: 5;8 F 7@ 5:8 F @<: 75 5:7=E5 :78 C<FG685869 C<?8:8B EG 5;8 ? 6689 B<J@ J ;7C; 5;89 >6<J8B$;8 A:8 5 G8 I 57 / :<8 8?8: 6 5;<E @B >885 =<?8 5;8 A6 C78: 0 @B 5;8@0 @<J0 ; 558:8B =9 E@ @B >:< 50 G<E:8B B<J@ 5;87: ;<J8: <> :<C I @B 5<@8 0 7@ J75@8 <> J ;7C; 5;8:8 :8 5;8 7F F8@ 8 G768 <> @AE6 : >: AF8@5 5; 5 C<@ 575E58 5;8 F<: 7@8 <> ?:8 $P ;8 J7@8 J ;7C; 7 B:E@I 7@ 5; 5 5<J@ 7 G:<BEC8B >:<F <760 5; 5 J =<:@8 =9 5;7 A:8 5 A6 C78: >:<F 5;8 6<G8 <> <@58 < 0 @B =<E6B8: >:<F <@5 6 @C :8 G:8 B <?8: 5;8 C<E@5:9 =85J88@ 5; 5 5<J@ @B 5;8 <0 EGG697@A 8LC8668@5 F 58:7 6 ><: =E76B7@A GE:G< 8 0 J ;7C; J8:8 I@<J@ 5< 5;8 U<F @ 0 J ;< 8FG6<98B 5;8F 7@ <F8 <> 5;87: 8:8C57<@ 5 @5;7 $ >P

;8 F<: 7@8 :<E@B ?:8 :8 <> 8L5: <:B7@ :9 B7F8@ 7<@ $; 5 J ;7C; J 5;8 6 58: 6 F<: 7@8 <> 5;8 68>5 = @I <> 5;8 A6 C78: 7 =<E5 $ '6<@A0 @B0 7@ <F8 G6 C8 0 :7 8 5< ;87A;5 <> Q >885 =<?8 5;8 >6<<: <> 5;8 ? 6689 :<>8 <: :57@ 58: F 75 Z6 G6E 868?B80 6 G6E :+AE 8:80 85 6 F78EL C : C5 88 B8 6G8 $3 . 5 7 6<C 669 C 668B ! ;8 6 58: 6 F<: 7@8 <> 5;8 :7A;5 = @I 6 <:7 8 5< ;87A;5 <> >8850 @B J<E6B =8 B88F8B 8@<:F<E =E5 ><: 5;8 G:<L7F 759 <> 75 A:8 58: C<F: B8 0 J ;768 5;8 58: F7@ 6 F<: 7@8 C<?8: <F85;7@A 67I8 5J8@59 HE :8 F768 <> C<E@5:9$

;8 8:: 57C @ 5E:8 <>5;8 F 58:7 6 <>5;8 8 A:8 5 :E==7 ; ;8 G J B7 57@C569 G<7@58B <E5 =9 ' 8 E E:8 #1 ' dd 12 1 N0 5;87: 5:E8 <:7A7@ J E= 8HE8@569 7@B7C 58B =9 8 : $ 5EB8: M 22N @B &E9<5 M 21N0 @B 5;8 8LC8668@5 CC<E@5 <>

P 88 &8@8: 6 G$ > F 7@B8=58B ><: 5;7 > C5 5< :<>8 <: & 5 6B7$ > 2 '% 26' E]

<G ! "(!' ! ' 4 ' (! 6# 7 / *

5678F' J ;7C ;' ; ' :8C8@569' =88@' GE=67 ;8B' =9' :<>8 <: ' :57@ ' @B' & 5 6B7' 68 ?8 ' @<5;7@A' 5<' =8' B8 7:8B' 875;8:' 7@' CCE: C9' <:' C<FD G6858@8 $P' 5' 7 ' @<5' F 9' GE:G< 8D 5;8:8><:8D 5<' 8@58:' 7@5<' 'B8 C:7GD 57<@' <>' 5;8FD =E5' <@69' 5<' B7 CE ' <F8' C<@ 7B8: 57<@ ' :7 7@A' <E5' <>' 5;8' > C5 ' J ;7C ;' ; ?8' =88@' 6:8 B9' F8@57<@8B$

5' ; ' =88@' G:<?8B' =89<@B' B<E=5' 5; 5' 5;8 8' A7A @57C' F<E@B ' :<E@B' ?:8 ' :8' C5E 669' 5;8' F<: 7@8 ' <>' ' A6 C78:' M@<J' 8L57@C5N' J ;7C ;' <CCEG78B' 5;8' ? 6689' <>' < 5 ' D @B' 75' 7 ' 7@B7 GE5 =68' 5; 5' 5;8:8' :8' =<E6B8: ' >:<F' <@5' 6 @C' F<@A 5' 5;8F$;8' ><: F8:' > C5 ' C8:57>9' 5; 5' 5;8' A6 C78:' J ' <>' 8@<:F<E ' 7S8D @B' 5;8' 6 558:' 5; 5' 75' FE 5' ; ?8' 8L7 58B' ><:' ' G:<B7A7<E ' 68@A5;' <>' 57F8$

;8' ;87A;5' <>' ' ! ' 7@B7C 58 ' 5;8' $' <>' 5;8' A6 C78:$' 5' B<8 ' @<5' >7L' 5;8' B8G5;' = <6E5869D 7@ FEC;' ' 75 ' C:8 5' FE 5' ; ?8' =88@' B8A: B8B' BE:7@A' 5;8' 5;<E @B ' <>' 98 : ' J ;7C ;' ; ?8' 86 G 8B' 7@C8' 5;8' :85:8 5' <>' 5;8' 7C8D @BD >E:5;8:D 75' 7 ' G< 7=68' 5; 5' <F8' G<:57<@ ' <>' 5;8' E:> C8' <>' 5;8' A6 C78:' F 9' ; ?8' =88@' C<@ 7B8: =69' 868? 58B' =<?8' 5;8' F<: 7@8' J ;8@' 75' J ' 5' 75 ' F L7FEF' 6575EB8$ @9;<JD 5' 5;8' F<E5;' <>' 5;8' ? 6689' <>' < 5 D 5;8' 5;7CI@8 ' <>' 5;8' A6 C78:' FE 5' ; ?8' =88@' 5' 68 5' NUUU' >885D @B' 75 ' J7B5;D 5' 5; 5' G :5D >7?8' F768 ' @B' 'HE :58:$

;8' =<E6B8: ' >:<F' <@5' 6 @CD EG<@' 5;8' G6 7@' =86<J' ?:8 0 E:8' E ' 5; 5' 5;8' A6 C78:' J ;7C ;' 5: @ G<:58B' 5;8F' 8L7 58B' ><:' G:<B7A7<E ' 68@A5;' <>' 57F8$;87:' G:8 8@5' B7 5 @C8' >:<F' 5;8' C67>> >:<F' J ;7C ;' 5;89' (8:8' B8:7?8B' 7 ' =<E5' 2Q 0 ' >885D @B' 7>' J8 EF8' 5; 5' 5;89' 5: ?8668B' 5' 5;8' : 58' <>' 2 ' >885' G8:' @@EFD 5;87: !<E:@89' FE 5' ; ?8' <CCEG78B' 5;8F' @<' 68 ' 5; @' ' 98 : ' ' @' 66 G:<= =7675' 5;89' B7B' @<5' 5: ?86D <' > 5$ E5' 8?8@' 7>' 5;89' J8:8' 5< =8' C:8B758B' J75;' ' HE7CI8:' : 58' <>' F<57<@D 5;8' 68@A5;' <>' 57F8' J ;7C ; 5;87:' !<E:@89' FE 5' ; ?8' 5 I8@' J766' =8' E>>7C78@5' ><:' F 9' GE:G< 8 $>'

P

P' ' 9 ' ' 7 ' 2 ' ' ' 1 * ' ' " ' 8L5: 75' BE' E66857@' B8' 6 ' <C7858' & 8<6<A7H+E8 B8' : @C8D P $

5' 88' 4<:=8 R E 2 ' ' ' $ ' $ ' &' ' GG$' D @B' ' $ 2 '$' $ ' ' &' ! ' QB' 8B$ GG$' 1D ><:' 7@><: F 57<@' =8 :7@A' EG<@' 5;8' F8 @' @@E 6 F<57<@' <>' 8L7 57@A' 6G7@8' A6 C78: $' @' 5;8' ><: F8:' J<: I' @' CC<E@5' 7 ' A7?8@' <>' 5;8' B7 C<?8:b" <>' 5;8' :8F 7@ ' <>' ' I@ G CI' 58@' 98 : ' >58:' 75' ; B' =88@

;8 G C8 <> 98 : ; <J8?8: =9 @< F8 @ :8G:8 8@5 5;8 BE: 57<@ <> 5;8 67>8 <> 5;8 A6 C78: <> < 5 $ 5 F 9 ; ?8 8L7 58B ><: 7F F8@ 8 G8:7<B =<5; @58:7<: @B G< 58:7<: 5< 5;8 !<E:@89 <> 5;8 <@5 6 @C =<E6B8: $;8 >:<@5 6 58: F7@ 6 F<: 7@8 ; J ;7C ; 5:85C ; >:<F 6E < 5< (7?8:<@8 M B7 5 @C8 <> F<:8 5; @ 58@ F768 N :8 8?7!+@C8 5; 5 5;8 @<E5 <> 5;8 A6 C78: :8F 7@8B 5 57<@ :9 <: @8 :69 < ><: 68@A5 ; <> 57F8 J ;7C ; FE 5 5 68 5 =8 8 57F 58B =9 C8@5E:78 @B G:<= =69 8L58@B8B <?8: 5;<E @B <> 98 : $;8 8 F<: 7@8 C<@ 575E58 7FG<:5 @5 C; 7@ <> ;766 J ;< 8 = 8 :8 8?8: 6 F768 C:< $ @B J ;7C ; 55 7@$; 87A ;5 <> F<:8 5; @ 5;<E @B >8850 @B 5; 89 J8:8 ><: F8B =9 5;8 A: BE 6 @B 6<J G:8 B7@A <E5 <> 5;8 F8B7 6 @B 6 58: 6 F<: 7@8 75 7 8?7B8@5 5; 5 5;89 J8:8 @<5 =E765 EG 7@ B 9$

<:8<?8: J ;8@ 5;8 A6 C78: <> < 5 ;: @I J 9 >:<F ?:8 75 :85:<A:8 7<@ F 9 ; ?8 =88@ C<FG : 57?869 : G7B <: 75 F 9 ; ?8 =88@ C<@BEC58B J75 ; 8L5:8F8 B867=8: 57<@$ E5 E@B8: @9 C7:CEF 5 @C8 5;8 8L57@C57<@ <> EC ; 5:8F8@B<E =<B9 <> 7C8 FE 5 ; ?8 8L58@B8B <?8: F @9 98 : @B ><: G<:57<@ <> 5; 5 57F8 6 :A8 G :5 <> 5;8 F FE 5 ; ?8 =88@ B? @C7@A B<J@ 5;8 ? 6689 65 ;<EA ; 5;8 @<E5 <> 5;8 A6 C78: J :85:8 57@A @B 6D 5;<EA ; 5;8 8@57:8 F J B7F7@7 ;7@A 7@ ?<6EF8$ > 5;8 57F8 7

B:<GG8B 7@ C:8? 8 5 ; <:7S<@5 6 B7 5 @C8 <> 2 >885 >:<F 5;8 G6 C8 5 J ;7C ; 75 ; B =88@ 6< 5 ;<J7@A @ ?8: A8 @@E 6 F<57<@ <> 2 >885+ @ 5;8 6 558: J<: I 5;8:8 7 :86 57<@ <> 5;8 :8C<?8:9 <> 5;8 :8F 7@ <> 6 BB8: E 8B ;9 8 E E:80 J ;7C ; B 5: ?8668B =<E5 0 >885 7@ 22 98 : <: Q >885 G8: @@EF$ 4<:=8 9 5; 5 5;8 >7: 5 <> 5;8 8 5J<$8L FG68 7 =8558: C8:5 7@8B 7@ 66 75 G :57CE6 : 5; @ 56+8 <5;8:$ 5 ;<E6B ;8 <= 8:?8B 5; 5 5;8 I@ G CI 7@ HE8 57<@ F B8 5;8 B8 C8@5 <>5;8 866 I@<J@ Z7C8 > 66 3 <>5;8 &6 C78: B8 68>:80 @B 5; 5 5;8:8 J B7>8:8@C8 <>68?86 =8:7?88@ 5;8 G6 C8 5 J ;7C ; 75 J 6< 5 @B 5; 5 5 J ;7C ; 75 J ><E@B <> 2 >8850 5; 5 7 < 9H 75 B8 C8@B8B <@8 ><<5 7@ 8?8:9 ><E: 5; 5 75 B? @C8B$ 677 : G7B B8 C8@5 E@B<E=58B69 CC868: 58 5;8 F <57<@ <> 5;8 &6 C78: B8 68>:8$;8 5<J@ <> ?:8 <@ 5;8 <5;8: ; @B 7 1 >885 M 66 =<?8 5;8 68?86 <> 5;8 8 J ;768 @5:8?8 M 5 5;8 ><<5 <> <@5 6 @C 7 2Q >885 M 78E685N$ < 5; 5 5;8 A6 C78: J ;7C ; <@C8 G:8 B <?8: 5;8 758 <> 5;8 8 5J< G6 C8 MJ ;7C ; :8 =<E5 F768 G :5 B8 C8@B8B ;9 @ ?8: A8 A: B78@5 <> 6F< 5 8L C569 7@ $;7 F<B8: 58 : 58 <> 7@C67@ 57<@ J<E6B C8:5 7@69 58@B 5< :85 :B 5;8 F <57<@ <> 5;8 A6 C78: $

Q

C<@ 7B8:8B' J ;7C;' J ' C<@ EF8B' BE:7@A' 5;7 ' G; 8' <>' 75 ' 67>80 @B' 5;8' 57F 8' J ;7C;' 86 G 8B' BE:7@A' 75 ' G:<6<@A8B' <!<E:@' 5' ?:8 0 @B' 5;8' 57F 8' J ;7C;' G 8B' =8><:8' 75' 55 7@8B' 75 ' F L7FEF' B7F8@ 7<@ 0 75' FE 5' ;8' C<@C8B8B' 5; 5'5;8' G8:7<B' <>' ' 98 : ' J 0 7@' 66' G:<D = =76759 0 <@69' ' ' G<:57<@' <>'5;8' 8G<C;' BE:7@A' J ;7C;' 5;8' (6689' <>' < 5 ' E 5 7@8B' 5;8' A7#@B7@A' <>'5;7 ' 8@<: F<E ' F ' <>'7C8$

85' E ' C<@>7@8' <E: 86?8 ' 5<' C8:5 7@578 $' 8:80 5;8@0 J ' ' A6 C78:' J ;7C;' >6<J8B' B<J@' 5;8' (6689' <>' < 5 ' ><:' F<:8' 5; @' ' 5;<E @B' 98 : 0 ; ?7@A' ' 5;7C I@8 ' <>' Q ' >8850P' ' J 7B5;' <>' 8?8: 6 F768 0 @B' ' 68@A5;' <>' 87A;59' F768 $' ;8' 8L7 57@A' A6 C78: ' <>' 5;8' 6G ' B<' @<5' GG:< C;' 5;8 8' B7F8@ 7<@ 0 @B' 8?8@' 7@' 5;8' G8:7<B' J ;8@' 5;8' 7C8 5:8 F ' <>' E:<G8' ; B' <' A:8 5' @' 8L58@ 7<@' 5;8:8' J8:8' ?8:9' >8J' J ;7C;' E:G 8B' 5;8F$ 5>66' >8J8:0 G8:; G 0 8L7 58B' ><:' <' 6<@A' ' G8:7<B0 @B' 5;8:8' :8' G:<= =69' <@69' <@8' <:'5J<K EC;' ' 5;8' @C78@5' A6 C78:' <>'5;8' ;<@8 K J ;7C;' ' ?8' :8C87?8B' ' FEC;' 558@57<@' @B' ; ?8' =88@' ' C :8>E669' 5EB78B$' <:'5;8 8' :8 <@ ' 75' 88F ' 5<' F8' 5<' =8' F<:8' B? @5 A8<E ' 5<' :8>8:'5<'75'5; @'5<'7@ 5 @C8 ' F<:8' 7FG8:>8C569' I@<J@' @B' F<:8' <G8@' 5<' B<E=50 @B' ' ; ?8' 868C58B' 750 <@' CC<E@5' <>' 5;8 8' :8 <@ 0 ' ' ? 6689' J677C;' ;<E6B' >><:B' 5:<@A' 58 57F<@9' 7@' EGG<:5' <>'5;8' 5;8<:78 ' J ;7C;' 8:5' 5; 5' 5;8' ? 6689 ' @B' F @9' <>' 5;8' 6 I8 = 7@ ' <>' 5;8' 6G ' ; ?8' =88@' 8LC ? 58B' =9' A6 C78: $

;8' 6 558:' <>' 5;8 8' 5J<' 5;8<:78 ' J ' C<F FE@7C 58B' 5<' 5;8' &8<6<A7C 6' <C7859 0 =9' :<>8 <:' F 90 <@' :C;' 0 Q$ >P' 5' :8C87?8B' FEC;' 558@57<@0 @B' 8LC758B' FEC;' C:757C7 F$' ' F' @<5' J :8' 5; 5' :<>8 <5' F 9' :8G678B' 5<' @9' <>' ;7 ' C:757C 0 8LC8G57@A'' 7:' <B8:7C I' E:C;7 <@' @B' 7:' ; :68 ' 98 / $' E5' 7@' @ J8:' 5<' 5;8' <=!8C57<@ ' J ;7C;' J8:8' : 7 8B' A 7@ 5' 5;8' :8C8G57<@' <>' ;7 ' 5;8<:9

P' ;7 ' 7 ' E@B8: 5 57@A' 5;8' C 8$' ;8' 5;7C I@8 ' <>' 5;8' A6 C78:' 8LC88B8B' Q ' >885' 5' 5;8' $' <>' 5;8' ? 6689 0 J ;8:8' 75' ; B' ' J7B5;' <>' .' F768 $' @' 5;8' ? 6689' 75 86>0 J ;8:8' 5;8' J7B5;' J '68 0 5;8' 5;7C I@8 ' GG8 : '5<' ; ?8' =88@' C<@ 7B8: =69' F<:8' 5; @' Q ' >885$

5' :<>8 <:' F 9R' G G8:' J 'G:7@58B' 7@' 5;8' # '8 2 ' ' ! ' EAE 5' Q$;8' A8: F ' <>' 5;8' 7 <>8 <:R' 5;8<:9' :8' 5<' =8' ><E@B' 7@' ;7 ' ' ' &' !9 _ ' ' $' F ' 0 GG$' 0 10 0 $

6# 7 / * " ! !' !) ' 4 <

=9' 5 ; 8 8' B7 57@AE7 ; 8B' A8<6<A7 5 0' ; 8' GE=67 ; 8B' 5J<' G G8: ' 7@' 5 ; 8'
$ $ ' ' _ C@' @B0' 7@' 8@B8 ?<E:7@A' 5<' G:8 8@5' F 9'
:8 B8:' J75 ;' ' 2 ' <>' 5 ; 8' :<>8 <:R ' ?78J 0' ' ; 66' B: J' >:<F'
5 ; 8 8' G G8: ' ' >:8869' ' >:<F' ; 7 ' <:7A7@ 6' F8F<7:0' ><:' 5 ; 89' >><:B'
FG67>7C 57<@' @B' 86EC7B 57<@' <>' ; 7 ' :AEF8@5$P P
:<>8 <:' F 9' 7B0' 7@' <G8@7@A' ; 7 ' C 80' Z ; 8:8' 7 ' @<' G<7@5' 7@'
G ; 9 7C 6' A8<A: G ; 9' F<:8' B7>7 CE65' 5<' CC<E@5' ><:' 5 ; @' 5 ; 8' <:7A7@' <>'
F< 5' 6 I8 $) ; 8@' 5 ; <EA ; 5' =<E5' 5' 660' 75' 7 ' 8 9' 5<' 88' 5 ; 5' 6 I8 '
:8' 5 ; 8' :8 E65' <>' 5 ; 8' ><: F 57<@' <>' ; <66< J 0' ' A:8 5' G:<G<:57<@' <>'
J ; 7C ; ' :8' 5:E8' = '5 ; 5' 7 ' 5<' 90' 7@' ; <66< J ' 8@57:869' E:D
:<E@B8B' =9' <67B' :<CI 0' 5 ; 8' J 58: ' @<5' =87@A' :85 7@8B' =9' 6<< 8'
B85:75E $3.' 5' 7 ' 7@' :8>8:8@C8' 5<' EC ;' <@8 ' 6<@8' 5 ; 5' ; 7 ' 5 ; 8<: 9' 7^'
G:<G<E@B8B$ 8' 5 ; 8@' J8@5' <@' 5<' 5 580' 7@' 8 G8C7 6' :8>8:8@C8' 5<'
6 I8 ' <>' 5 ; 7 ' C6 '7@' 5 ; 8' 6G K
d' $ Y ; 5' 5 ; 8' 5 ; 8<: 9' <>' @' :8 ' <>' ' $ 3 ' ><:' 8 C ;'
6 I8' 7 ' E@58@ =68$
d' N' ; 5' @<@8' <>' 5 ; 8 F' 678' 7@' 67@8 ' <>' ' '' & 2 ' M:8@5 ' @B'
>7 E:8 N$
d' $; 5' @<@8' <>' 5 ; 8 F' <CCEG9' 7F G68' 9@C67@ 6' = 7@ ' ><: F8B'
=9' 5 ; 8' F8:8' B7 5E:= @C8' <>' 5 ; 8' 5: 5 ' >58:' 5 ; 8' C6< 8' <>' 5 ; 8' 7<C8@8'
8G<C ; $3d
@B' ; 8' 5 ; 8:8><:8' :AE8B' 5 ; 5' 5 ; 89' F E 5' ; ?8' =88@' G:<BEC8B' =9'
8:< 7<@0 =E5
d' 2$; 89' B<' @<5' 678' 7@' ; < / < J ' <>' C<F F<@' J 58:9' 8:< 7<@0' @<:'
C @' 5 ; 89' =8' 8>>8C5 ' <>' F :7@8' B8@EB 57<@$
8' C<@ 8HE8@569' C<@C6EB8B0' Z >' J8' ; ?8' B7 G< 8B' <>' 5 ; 8 8'
; 9G<5 ; 8 8 ' ><:' 5 ; 8' ><: F 57<@' <>' EC ;' ; <66< J 0' J ; 5' 7 ' 68>5' ^
d' $; 8' <@69' :8 F 7@7@A' A8@5' 7 ' 5 ; 8' B8@EB7@A' G< J 8:' <>' 7C8$3ff
8' 5 ; 8@' G:<?8B' 5 ; 50' 7@' 5 ; 8' 6G ' @B' 86 8J ; 8:80

P C5<=8:' 20' F 5' G:76' $
5' ' ; 66' 6 <' <CC 7<@ 669' :8>8:' 5<' ; 7 ' $ ' G ' ' ' $ ' &' '
" ' @B' 5<' ' ' &' ! 9 _ ' 85C$
_' $ ' ' ' ' ' $ ' &' 7 ' " ' G$ $
d ' ' ! ' EA$' Q0' G$ Q $' ff $ ' ' ' ' ' $ ' G$ $

d' $ Z C;' <>' 5;8' 6 I8 ' 678 ' 7@' @' :8 ' <@C8' C<?8:8B' =9' ' ? 5' A6 C78:$3P

@B' J8@5' <@' 5<' :8 <@K

d' 1$ Z >' 'A6 C78:' C @' :<E@B0' G<67 ;0' @B' C<?8:' J75;' 5:7 57<@ '5;8' :<CI ' <?8:' J;7C;' 75' G 8 K 7>0' >6<J7@A' >:<F' 75 ' C ?8:@ 0' 75' C @' C; :A8' :7?8: ' 5;7CI69' J75;' 5;8' >7@8 5' FEB0' 5;8@' 75' C @' J8 :' J 9' 75 ' :<CI9' >6<<:' @B' 7B8 $3']P

d' $ 8' EF8B' 5; 5' A6 C78: ' :8' C<FG858@5' 5<' G:<BEC8' 6 I8 ' = 7@ 0' @B' 5; 5' 5;89' ; ?8' B<@8' <' =9' C<<G7@A' <E5' <>58:' G :5 ' <>' 5;8' C<E@5:90' 68 ?7@A' ;<66<J ' F:<E@B8B' =9' ' >: F8J<:I' <>' ; :B8:' :<CI ' 0 Z=@5' G8:; G ' F<:8' A8@8: 669' 5;89' M5;8' :<CI = 7@ N' J8:8' ><:F8B' =9' 5;8' A:8 58:' 5;7CI@8 ' @B' J87A;50' @B' C<@ 8HE8@569' G:<D G<:57<@ 669' A:8 58:' A:7@B7@A' G:8 E:8' <>' A6 C78: 7C8' 7@' G :57CE6 :' :8 03 0 Z5;8' 75E 57<@ ' <>' J;7C;' F 9' ; ?8' =88@' B858:F7@8B' =9' CC7B8@5 6' C7:CEF 5 @C8 0' 5;8' C6E8' 5<' J;7C;' 7 ' 6< 50' >:<F' <E:' 7@ =7675' 9' G8:>8C569' 5<' :8C<@ 5:EC5' 5;8' <:7A7@ 6' ><:F ' <>' 5;8' A6 C78: $3'd

;8' G :57CE6 :' F @@8:' 7@' J;7C;' ;8' EGG< 8B' 5;8' A:8 5' 6 I8 = 7@ ' <>' 5;8' 6G ' J8:8' ><:F8B' J ' ' ><66<J '[K

d' $ Z 5' J766' =8' 8?7B8@5' 5; 5' J;8@' 5;8' A8@8: 6' 7@C67@ 57<@' <>' ' ? 6689' J ' C<FG : 57?869' 588G0' 'A6 C78:' C<E6B' ; ?8' ; B' @<' <GG<:D 5E@759' <>' CE557@A' ><:' 75 86>' @9' G8C7 6' = 7@ ; G8B' ;<66<J $' 5 ' C<E: 80' J75;' ' B7>>8:8@C80' 7 ' 67I8' 5; 5' <>' ' 5<::8@5$ E5' 7@' ' >6 5 ' =<55<F8B' G :5' <>' ' ? 6689' <:' 7@' ' C<FG : 57?8' G6 7@' 5; 5' 678 ' 5' 5;8' = 8' <>' ' F<E@5 7@' : @A80' 5;8' C 8' 7 ' @<5' 5;8' F8$ 4<:' 7@ 5 @C80' 5<' 5 I8' @' 8L5:8F8' C 80' 7>' 'A6 C78:' 5EF=68' <?8:' ' 6<G8' <>' 2 `0' @<' <@8' J<E6B' B:8 F' <>' 5;8' 7C8 >6<J'G:<BEC7@A' @9' G8C7 6' 8>>8C50' 8LC8G5' 5; 5' 7@' 5;8' 6<@A' :E@0' 5;8' EGG8:' 8BA8' <>' 5;8' :<CI' 5; 5' ><:F ' 5;8' C 5 : C5' =87@A' J<:@' J 90' 75 ' ?8: A8' @A68' J<E6B' =8' 6<J8:8B$ @B' <' <>' F7@<:' 6<G8 0' 7>' 5;8' 7C8' >6<J7@A' > 5' M><:' ' A6 C78:N' :8@B8:8B' 5;8' :<CI9' E:> C8' E@B8:@8 5;' E@8HE 60' EC;' 7@8HE 67578 ' C<E6B' @<5' =8C<F8' A:8 5' @B' G8:F @8@50' ><:' 5;8' : G7B69 >6<J@@A' 7C8

P' ' U ' ! ' G$ $ 5' $ ' && ' C5<678:' 20' G$ $
_' ' ' ! ' Q0' G$ $ d 83 ' G$ Q $

J<E6B' 55 CI'5;8'G:<!8C57@A'G :5 ' J75;'A:8 58:'G<J8:' @B'8>>8C5'5; @' 5;8' F7@<:' ;<66<J 0' @B' <'G:8 8:?8' @' GG:<L7F 58'E@7><:F759 0' <:' @' ?8: A8' @A68' <>' F<B8: 58' 7@C67@ 57<@$' E5' J;8@' ' F<@ 5:<E ' A6 C78:'B8 C8@B8B' 7@5<' 'C<FG : 57?8'G6 7@0' <:'7@5<' '6<J'>6 5'? 66890' 5;8'C 8' J ' B7>>8:8@5$;8:80' 5<' 70f 8' ;<F869'G;: 8 0' 5;8' 7C8' ; B' 57F8' 5<' 868C5' <>5' G6 C8 ' ><:' 8LC ? 57<@0' @B' 5;8:80' 7>' >:<F' 5;8' C<@>6E8@C8' <>' 6 :A8' A6 C78: 0' <:' ><:' <5;8:' :8 <@ 0' 5;8' B<J@J :B' G:8 E:8' <>' 5;8' 7C8' J ' <>' 8L5: ' F<E@50' 5;8' 8LC ? 57@A' 8>>8C50' ' C<@58@B0' FE 5' ; ?8' =88@'E@E E 669' A:8 5'7@' G8C7 6' :8 0' @B' ; ?8' :8 E658B' 7@' 5;8' ><:F 57<@' <>':<CI =<E@B' ;<66<J $3P

8' CC<E@58B' ><:' 5;8' B88G' G :5 ' <>' 5;8' 6 I8 ' =9' EGG< 7@A' 5; 5B7

d' $ Z ;8' A:7@B7@A' C57<@' 6 58B' >58:' ' A6 C78:' ; B' :857:8B' =<?8' 5;8' G< 757<@' <>' 5;8' G:8 8@5' 6 I8 ; ::78:0' <'5; 5' 5;8' J 58' <>' 5;8' :<CI9' >6<<:' =87@A' 6<@A' C<@57@E8B0' =9' B8A:88 ' 5;8' A6 C78:' J<:8' <E5' ' B8G:8 7<@' B88G8:' @B' B88G8:0' 5766f' <@' 75 ' >7@ 6' :857:8F8@50' 5;8' GBC&' <@C8' <CCEG78B' =9' 7C8' =8C F8' >7668B' J75;' 5;8' J 58:' B: 7@ A8' <>' 5;8' A&

;8' ; 66<J@8 ' 5'5;87:' F<E5;' J ' 5;E ' 8LG6 7@8B' [K

d' $ ' 5;8' A6 C78:' ZG:<A:8 8B' @B' F8658B0' 5;8' 7C8' FE 5' ; ?8' =88@' 5;7@@8:0' @B' FE 5' ; ?8' 8L8:C7 8B' 68 ' 8:< 7?8' G<J8:' 5; @' J;8:8' 75' J ' 5;7CI0' J;8@C8' 5;8' A: BE 6' 6<G8' <>' 5;8' =<55<F' <>' 5;8 8' 6 I8 ' 5<J :B ' 5;87:' <E5>6<J $3 ' "

d' Q$ Z ;8:8><:8' ' ; ?8' =88@' ><:C8B' 5<' 5;8' C<@C6E 7<@0' >:<F' ' C:757C 6' 8L F7@ 57<@' <>' F @9' <>' 5;8' 6 I8 ' 7@' @B' :<E@B' 5;8' 6G 0' 5; 5' 5;87:' = 7@ ' J8:8' C<<G8B' <E5' =9' 5;8' A:8 5' A6 C78:' ' <>' 5;8' A6 C7 6' G8:7<B$3d

;8' 5<@7 ;F8@5' J;7C;' :<>8 <:' F 9R' 5;8<:9' C:8 58B' ; B' @<5' E= 7B8B' J;8@' :<>8 <:' 9@B 66' =:<EA;5'><:J :B' <G7@7<@' ' <>' @' 8?8@' =<6B8:' C; : C58:0ff @B' ?<J8B' ;7 ' =8678>'5; 5'5;8' ' <>

P' $ ' ' ' C5<=8:' 20' G$ $ _' $ ' ' ' G:76' 0' G$ Q $
5' ' ' GG$ 2 $ d' $ ' I ' ' ' ' G$ $
' $ ' ' ' 8G5$ Q$

5;8' 6G ' ; B' =88@' M8@57:869^N' 8LC ? 58B' =9' A6 C78: ' ' 7 ' EF F7@A' EG' J ' '><66<J '[K

K' <34 9A;<' 36' 3?564 839' ;7=I5456 4 47' I%7A?<' 7A4 4<5' %I 65' 3%529' ;3667 4;' '4< 6J,';<5' :7AL45:'%M 8<%5'4<5' .3;4 4<34 :A#6?'4<5'3?59 8<;<'<3 5' 5%3I95:' 96;5' 49' :93II53#36;5'4<5' 7#:63#2':56A:6?' 3;476' 7.' 4<5' 34=7N 9I<5#5' <39' L556' A63L%5,' 6' =79 ;3959,'47' 7L%45#345' 5 56'4<5' 9AI5#.;3%4#3;59' 7.' 4<5' ?%3;5#9,' 9A??59%9 4<5' 6;7=I5456;5' 7.' 4<34 3;476' 47' I#7:A;5' 4<5' 93=5 5..5;4' <34 4<5' ?%3;5#9' <3 5' L556' 4<5' #53%5 ;3 347#9' 955=9 47' =5' .3#=7#5' I#7L3L%5' 4<36' 4<5' 9AII794 76' 4<34 4<52' =5#5%2'.%5:' 3%529' 8<;<'<3:' L556' I#5 7A9%2' .7#=5:' L2' 83 45#:56A:34 76' 6:55:' 4<5';<7;5'%59' L548556' 4<595' 487' 9AII794 769'/ 9<3%' 85' 399A=5' 4<34 ?%3;5#9' .%5:' 3%529' 8<;<' 85#5' I#5 7A9%2' .7#=5:' L2' 8<34 87A%:' A6:7AL45:%2' L5' 3' 853J5# 3?564 Ó 7# 9<3%' 85' ;76;%A:5' 4<34 4<52'<3 5' L556' 4<5' 5 ;3 347#9' 8<;<'<3 5' .A##785:' 4<5' AIN %.45:' %36:' 8 4<' 4<5' 3%529' 8<;<' 678' 645#95;4 4' Ó ' :7 674 <59 4345' 47' 3;;5I4 4<5' %3445# 58 PQ $ ' ' 5I4' < >G!' I' < G*

LC8G5' ><:' 5;8' C; : C58:' <>' 5;8' F A S7@8' 7@' J;7C;' ':$ 9@B 66R' G G8:' GG8 :8B0' 75' F7A;5' ;?8' =88@' EGG< 8B' 5; 5' ;8' J ' G<I7@A' >E@' 5' ;7' :8 B8:' @B' 5' :<>8 <:' F 9$' 4<:' 65;<EA;' 5<' <F8' G8: <@' ;8' F7A;5' ;?8' 88F8B' 5<' =8' EGG<:57@A' 5;8'?78J ' <>'5;8' :<>8 <:0' ;8' J 0' 7@' :8 6759 0' B? @C7@A' <G7@7<@' J;7C;' J8:8' B7:8C569' <GG< 8B' 5<' 5;8F$' :<>8 <:' F 9' G:<FG569' :8GEB7 58B' 5;7' B<E=5>E6' 8L58@ 7<@' <>' ;7' 5;8<:9$' @B88B0' ;8' C<E6B' ; :B69' B<' <5;8:J7 80' >58:' ; ?7@A' G<I8@' <>' Z5;8' J866 C8:5 7@8B' > C50' 5; 5' 2' ' $' ' ' $' F< 5' <>'5;8' A: @B8:' C<@5<E:' <>' ;766' @B' ? 6689' J8:8' 7@' :75 7@' M @B' 86 8J;8:8' 7@' E:<G8' @B' F8:7C N0' ' $' ' ' 9 7D@' 8' @<J' :8G8 58B' 5;8' F8' 5 58F8@5' 7@' 67A;569' B7>>8:8@5' J<:B $ Z ;8'8?7B8@C8'7 "7FG8:>8C50' =E5' EC;' '75'7 0' 75' A7?8' FEC;' F<:8' 5; @' ' ;7@5' 5; 5' 5;8' 6 :A8' ? 6689' J8:8' 7@' 5;87:' F 7@' >8 5E:8' GG:<L7F 5869' ' B88G' ' @<J0' =8><:8' 5;89' J8:8' >7668B' J75;' 7C803>' @B0' >E:5;8:0' ;8' G:<BEC8B' 7@' 8?7B8@C8' ' G<58@5' :8 <@'><:' B8C67@7@A' 5<' =8678?8' 5; 5' 5;8' (6689' <>' < 5 ' ; B' =88@' 8LC ? 58B' =9' A6 C78: $' ;7'6 558:' G A8' J766' G:8D 8@569' =8' HE<58B' 5' 68@A5;0' <@' CC<E@5' <>'75'7FG<:5 @C8$.

4<:' '57F8' ':$ 9@B 66' F B8' @<' 7A@' 7@' :8G690' =E50' 7@' C5<=8:

"' ' ' &' F ' G$' >$' 5' $ ' '' %<?$' Q0' G$' 1 $

m' 88' GG$' 2 Q$

2 ;8 C<F FE@7C 58B @<5;8:G G8:5<5;8 $ $ ' _ 7@ J;7C;;8 F<B7>78B ;7 ?78J 5< C8:5 7@ 8L58@5 M @B F B8 5;8 7FG<:5 @5 BF7 7<@5; 5 75 J G8:; G 7FG< 7=68 5< 9 J;85;8: J 58:<:7C8 ; B G:<BEC8B 5;8 A:8 58 5 F<E@5<>8:< 7<@N 65;<EA; EG<@5;8 J;<68 ;8 B;8:8B 5< ;7 >:F8: 8:57<@ $;7 G G8: C<@5 7@8B <@8 :8F :I =68 G A8 :8F :I =68 =8C E 8 75 G :569 ;<J8B 5;8 J<:I7@A <> 75 E5;<:R F7@B @B =8C E 8 75 J GD G :8@569 7@58@B8B 5< C<@5:<?8:5 :<>8 <: F -5;8<:9$ 5 J >66<J [K

K 6 4<5 <?<5# 9%7I59 36: I%3453A9Q 6 4<5 #5?76 7.;7%9Q 4<5 I785# R7.?%3;5#90 9 674 .A%2 :5 5%7I5:M <A4 %785# :786 4# LA43#59 A6 45,5#7976 9 ;3##5:76 8 4<6;#5395: ?7A#,36: 4<5 5 ;3 3476 ?#3:A3%2 #53;<59 3 =3 =A= 785# 94 4<5 5%5 3476 9: = 69<36: 4<5 9%7I59 L5;7=5 =7#5 ?564%5 M 4<5 ;A44 6?I785# ?#3:A3%2 #5%3 59,36:'& $ $ '' 02 $ 9 ' $ $ $' ' G& 9$ $ 2 $ & 2 Q7@Q $ ' ' ;4 & (,I (

; 5 7 5< 9 G:8C7 869 7@5;8 75E 57<@ J;8:8 :<>8 <: F 9 :8HE7:8B A6 C78: 5< G:<BEC8 5;8 A:8 58 5 8>>8C5 $:$ 9@B 66 8:58B 5;89 G:<BEC8B @<@8 J; 58?8:: <>8 <: F 9 B7B @<5 66<J FEC;57F 8 5< 86 G 8 =8><:8 ;8 C<@5: B7C58B 5;8 5 58F8@5 C 58A<:7C 669$

K " 5#2 I<29;94,P 93 :<5,K J6789 4<34 8<56 9A;< 3 L7:2 39 ?%3;5#-;5 :59;56:9 3 9%7I5,4<5 :#5;4 5#4;3 I#599A#5 7.4<5 ;5 8 %L5 I#7I7#4763%47 49 4<;J6599 36:85?<4 36: 4<5 36?%5 7.4<5 9%7I5 7 5# 8<;< 4 .%789 . 4<5 36?%5 L5 S,4<5 85?<4 36:5#79 5 I785# 7.3? 56 4<;J6599 7.;5 8 %L5 97 =A;<,. & S 97 =A;<,%599, S %599 94 %,4 34 %56?4<,.85 =32 =3?65 4<5 .3%47 L5 7 5# 3 5#4;3% 83%7.#7;J,4<5 I#599A#5 3?3 69 4<5 83%R5 ;514 3;:5643%20 8 %L5 "2 9$ $ $ 3 & $ $ $ $ 4<56 =74 76 36:5#79 76 87A%:;5395,85#5 4 674 .7# I#59N 9A#5 .#7=L5<6:R5 ;5146?8<34 %44%5 =74 76 .7#83#:36: 9:58329 = ?<4 L5 :A5 47 49 786 85?<4D < 9 I#599A#5,<7855#,=A94<3 5 L556 ;769436 4 39 %76?39 9AII%59 7. 9678 .5%7 76 4<5 =7A643 69,36: 4<5#5.7#5 4<5 65#4 =399 6 4<5 I%3 6 839 ;769436 42 A#?5: 7683#:9 M 36: L5;3A95 7. 49 5#4;3% I#599A#5 9 2 3 $ $ 9$ 'C .7# 4 87A%:?#345 3;#799 4<5 #7;J9,39

P ;8 75 67C :8@<5 7@5;8<:7A7@ 6$

4' 85#5,' A68 6?2' 36:' L2' ;7=IA976,' 69453:' 7.' .6:6?' 49' 832' 7683#:9' =7#5' 7#599' L2' #4A5' 7.' ?#3 42 ') ' $' ' '& ' ' $' ' $ ' $' 2'' $ ' 9 2 '$ ' ' ' ' $E' &2 'G2 ' 2 ' $' 2$ &$' ' ' $ ' ' 2 2 2 ' $ ' $2' 6 '' & ' ' ' 6 ' ' 9 '@Q $ ' ' ' I # ' & ,' I '

:<>8 <:' 9@B 66' B<8 ' @<5' GG8 :' 5<' ; ?8' ><E@B' 5;8' :8G69' C<@D ?7@C7@A$ 8' 7 ' :8G<:58B' 5<' ; ?8' 7B' 5' 5;8' 6 5' 7:F7@A; F' F8857@A' <>' 5;8' :757 ;' <C7 57<@0' Z5; 5' ;8' J ' C<@?7@C8B' 5; 5' 5;8' A6 C78: ' <>' 5;8' 6G ' J8:8' C<FG858@5' 5<' C<<G' <E5' 5;8' ? 6689 ' <>' 5;8' 6G 03' P' @B' ' F' E@ J :8' 5; 5' ;7 ' <G7@7<@ ' ; ?8' E@B8:A<@8' @9' 658: 57<@' 7@C8' 5; 5' 57F8$ @' ' ;8' A ?8' ' ; :B' 7B8 ;6<J' 5<' :<>8 <:' F 90' 7@' D' ' _ ' =9' G:<?7@A' 5; 5' <F8' 8L7 57@A' 6G7@8' A6 C78: ' 8L8:C7 8' 675568' <:' @<' 8:< 7<@' EG<@' 5;87:' =8B ' @8 :' @B' 5' 5;87:' 58:F7@ 57<@ ' M @<E5 N0' =8C E 8' 5' EC;' G6 C8 ' 5;89' :8' ' ' :

5' 7 ' 7FG< 7=68' 5<' C:757C7 8' 5;8 8' 5J<' 5;8<:78 ' 5' 5;8' F8' F<F8@5$ <5;' <>' 5;8F' A:88' 7@' 55:7=E57@A' 8@<:F<E ' G<J8:' <>' 8LC ? 57<@' 5<' A6 C78: '0' =E5' 5;89' B7 A:88' 5<5 669' @B' C<FG685869' ' 5<' 5;8' 2 ' ' =9' J ;7C;' 5;8' 8>>8C5 ' J8:8' G:<BEC8B$;89' B7>>8:' 8?8@' 7@' 5;87:' A8@8: 6' C<@C6E 7<@ $ @8' 8:5 ' 5; 5' 5;8' A:8 58 5' 8>>8C5 ' J8:8' G:<BEC8B' EG<@' 5;8' G6 7@ 0' @B' 5; 5' ?8:9' =5568' J ' B<@8' F<@A 5' 5;8' F<E@5 7@ 0' J ;76 5' 5;8' <5;8:' B8C6 :8 ' 5; 5' 5;8' F<E@5 7@ ')8 5;87:' C5E 6' ><:F ' 5<' 5;8' C :?7@A' <>' A6 C78: 0' @B' 5; 5' 5;8' G6 7@ ' B7B' @<5' E>>8:' 5' 66' ;8:8' 7 ' @<' J<@B8:' 5; 5' 5;8' E@8@67A;58@8B' GE=67C' 8@HE7:8B0' Z) ;<' ; 66' B8C7B8' =85J88@' $ ' B7 A:88F8@5 ' <>' 5;8 8' B<C5<: ' ^3' E5' 75' ' E:G:7 7@A' 5<' >7@B' @EF8:<E ' G8: <@ ' CC8G57@A' ' A< G86' 5:E5;' 5;8' C<@5: B7C5<:9' ' <>' 5;8 8' 8F7@8@5' F8@0' @B' G8 I7@A' @B' J:757@A' ' 7>' 75' J8:8

P' <FG :7 <@' <>' 5;8' <@58@C8$ ' G6 C8B' 7@' 75 67C 0' J75;' 5;8' G:8C8B7@A' <@8' >:<F' ' :$ 9@B 66' J7/' ;<J' ;<J' 7::8C<@C76 =68' J8:8' 5;8' <G7@7<@ ' <>' 5;8 8' 5J<' J:758: $ ' _' " '$ '% ' ' 8G58F=8:' 0' $.' 5' FE 5' @<5' =8' @@B8: 5<<B' 5; 5' @95;7@A' <>' 5;8' @ 5E:8' <>' ' C<@5:<?8: 9' J ' C ::78B' <@0' 7@' 5;8' F A S7@8 ' C758B0' =9' 5;8' 5J<' :<>8 <: $ ' ;89' B7B' @<5' :8>8:' 5<' 8 C;' <5;8:' =9' @ F8' 0 =E5' 75' J ' 7FG< 7=68' 5<' :8 B' 5;8' G A8 ' J ;7C;' ; ?8' =88@' HE<58B0' J75;<E5' >8867@A' 5; 5' 5;89' J8:8' 7@58@B8B' 5<' ;8' :8!B78 ' 5<' <=!8C57<@ ' <@' 5;8' <5;8:' 7B8$

' ' ( ) "= !) ') ' ' 1 ((<' ' ! ' G<

8 5 =67 ;8B' 5; 5' 6 I8 = 7@ ' @B' F<E@5 7@ ? 6689 ' ; ?8' =88@' 8LC ? 58B' =9' A6 C78: $

5' 7 ' @<5' :8HE7 758' 5<' B8C7B8'Z=85J88@' 66' 5; 8' B7>>8:8@C8 ' C<@5 7@8B' 7@' 5; 8 8' 5J<' 5; 8<:78 0' 7@' <:B8:' 5<' ::7?8' 5' ' 5<68: =69' C<::8C5' !EBAF8@5' EG<@' 5; 8' A8@8: 6' C<@C6E 7<@ $' :<>8 <:' F 90' ><:' 8L FG680' 55:7=E58 ' 5; 8' G:<BEC57<@' <>' 5; 8' A:8 58 5' 8>>8C5 ' 5<' 5; 8' 9 '$' <>' A6 C78: $' :<>8 <:' 9@B 660' <@' 5; 8' <5; 8:' ; @B0' 7A@ ' F< 5'G<J8:' 5<5; 8' ' ' ; 66'7A@<:8'5; 8 8'G<7@5 0'=8C E 8' '; ?8' @<' B 5 '>:<F' J ;7C ;' 5<' ::7?8' 5' ' 57 > C5<:9' B8C7 7<@0' @B' =8C E 8' 75' 7 ' @<5' @8C8 :9' ><:' 5; 8F' 5<' =8' F7L8B' EG' J75;' ' B7 CE 7<@' <>' 5; 8' HE8 57<@$') 8:8' 5; 8' ? 6689 ' <>' 5; 8' 6G ' 8LC ? 58B' =9' A6 C78: ' ^ 4<:' 5; 8' C<@ 7B8: 57<@' <>' 5; 7 ' E=!8C50' 685' E ' @<J' :85E:@' 5<' 5; 8' (6689' <>' < 5 $

;8' 5<J@' <>' ?:8 '7 'G6 C8B' 5' 5; 8' F<E5;' <>0' =E5' @<5' C5E 669' J75; 7@' 5; 8' ? 6689 0' @B' 8?8: 6' F768 ' <>' >6 50' BE 59' :< B' ; ?8' 5<' =8' 5: ?8: 8B' =8><:8' 75' 7 ' 8@58:8B$ / G<@' 5; 7 ' G<:57<@' <>' 5; 8' C<E@5:9' C7?767 57<@' 7 ' B<7@A' 75 ' =8 5' 5<' 8>> C8' 5; 8' 5: C8 ' <>' 5; 8' A6 C7 6' G8:7<B$ E657? 57<@' <>' 5; 8' <76' B7 5E:= ' 66' B8G< 75 0' @B' 5; 8' ; F F8: ' <>' 5; 8' F <@ ' B8 5:<9' 5; 8' 8:: 57C $ >58:' HE7557@A' ?:8 0' 6F< 5' 5; 8' >7: 5' <=!8C5' <>' 7@58:8 5' 7 ' 5; 8' C 568' <>' <@5 65<0' G8:C;8B' <@' ' C<F F @B7@A' C: A0' @8 :69' 7@' 5; 8' C8@5:8' <>' 5; 8' ? 6689$;8@C8' >:<F' 8557F<' (755<@8' EG' 5<' 5; 8' ><<5' <>' 5; 8' 8L7 57@A' A6 C78: ' <>' 5; 8' : @A8' <>' <@5' 6 @C' 5; 8:8' :8' 5: C8 ' <>' A6 C78: C57<@' EG<@' 8 C;' ; @B$;8' :< B' @88B' @<5' =8' HE7558B' 5<' 88I' ><:' 5; 8F' 0K 5; 89' :8' 9$ ' ' :8>8:' 8 G8C7 669' 5<' 5; 8' :<CI ' ' 2' ;8' :<CI ' ><: F ' C 668B' $ ' 2 ' :8' E@7?8: 669' B7 5:7=E58B0' @B' 75' 7 ' @88B68 0' 5' 5; 8' G:8 8@5' F<F8@50' 5<' G<7@5' 5<' @9' 7@' G :57CE6 :$ 65;<EA;' <>' ? :97@A' B8A:88 ' <>' :8 7 5 @C90' 5; 89' ; ?80' EG<@' 5; 8' J;<680' 5<<B' 5; 8' J8 5; 8:7@A' :8F :I =69' J866' <>' 5; 8' 5; <E @B ' <>' 98 :' J ;7C ;' ; ?8' 86 G 8B' 7@C8' 5; 8' A6 C78:' C<?8:8B' 5; 8F$;8' >6<<:' <>' 5; 8' ? 6689 0' A8@8: 669' G8 I7@A0' ; ' @<5' =88@' 6<J8:8B' 7@C8' 5; 5' 57F80' =9' 5; 8' C<F=7@8B' A8@C78 ' <>' E@0' >:< 50' @B' J 58:0' 5<' @9' GG:8C7 =68' 8L58@5$;8' ><: F ' J ;7C ;' 5; 89' G:8 8@58B0' G8: ; G 0' 58@' 5; <E @B

]Q

98 : ' A<$ @9' <>' 5 ; < 8' J ; 7C ;' :8' & ' 8LG< 8B' 5<' 5 ; 8' 5F<D G ; 8 : 8' : 85 7@' ' ; 7A ;' G<67 ;' @B' >7@8' 5 : 7 57<@ $ >' 5 ; 8' <B$ J8 : 8' 5<' ;8' : 8 F <?8B' 5 ; 5' C<?8 : ' 5 ; 8' >6 558 :' G<:57<@ ' <>' 5 ; 8' ? 6689' J8@ ;<E6B' B<E=568 ' >7@B' $ '$ ' G<67 ;@ @B' 5 6& ' 5 : 7 57<@ $ %8?8 : 5 ; 868 @ 5 ; < 8' J ; 7C ;' :8' ?7 7=68' : 8 F 7@' <' G8 :>8C5@ 5 ; 5' 75' 7 ' C8 : 5 7@' J8 5 ; 8 : 7@A' ; ' B<@8' 8LC88B7@A69' 675568' 5<' 658 :' 5 ; 87 :' C<@5<E : @ @B' J8' F 9' :AE8' : 8A : B7@A' 5 ; 8 F ' ' 7>' 5 ; 87 :' 7C9' C<?8 : 7@A' ; B' =88@' ; E5' !E 5' : 8 F <?8B$;7 'G<7@5' 7 ' >'@<' F 667 F G<: 5 @C8' @ @B@ 75' 88 F ' 5<' F8@ 75' F 9' =8' B8 F <@ 5 : 58B' >: <F' 5 ; 8' ?8 : 9' C<@5<E : ' <>' 5 ; 8 8' A6 C7 58B' : <C I @ 5 ; 5' 5 ; 8' ? 6689' J ' ' 8LC ? 58B' = 9' A6 C78 : @ @B' 7@B88B@ 5 ; 5' 75' J ' 8 : <B8B' = 9' A6 C78 : ' <@69' 5<' ' ?8 : 9' 67 F 758B' 8L58@5$

4 <:' 5 ; 8' >< : F ' J ; 7C ;' :8' C 668B' 2 ' G : 8G<@B8 : 58' ?8 : 9' 6 : A869$;8' : <C I ' J ; 7C ;' ' ; ?8' ?8@5E : 8B' 5<' 58 : F' $ ' * ' :8' C<FG : 57?869' : : 80P 65 ; <EA ;' 5 ; 89' :8' E>>7C78@569' @EF8 : <E ' 5<' ;<J+' 5 ; 5' 5 ; 8' ? 6689' J ' E=!8C58B' 5<' 8?8 : 8' A : 7@B7@A' >< :' ' A : 8 5' 68@A5 ;' <>' 57 F 8$;89' :8' >< E@B' EG<@' 5 ; 8' >6<< :' <>' 5 ; 8' ? 66890@ <:' 7@' G6 C8 ' J ; 8 : 8' 75' @ : : <J @ <:' EG<@' 5 ; 8' 6< J 8 :' 7B8 ' <>' 675568' : ?7@8 ' M@<J' J 58 : C<E : 8 N J ; 7C ;' 5 ; 8' A6 C78 :' ; B' 5<' C : < @ 7@5<' J ; 7C ;' 75' J ' >< : C8B' B<J@' J ; 8@' 7@' 5 ; 8' C5' <>' C : < 7@A@ @B' <E5' <>' J ; 7C ;' 75' 8 C G8B' = 9' F <E@57@A' 5 ; 8' <GG< 758' = @ I $ @' = : 78>@ 5 ; 89' :8' >< E@B' G : 8C7 869' J ; 8 : 8' 5 ; 89' ; <E6B' = 8' >< E@B$ @' 5 ; < 8' G6 C8 ' J ; 8 : 8' 5 ; 8' 5 ; 7C I @8 ' <>' 5 ; 8' 7C8' J ' A : 8 58 50@ @B' J ; 8 : 8' 5 ; 8' F <57<@' J ' MG : <= =69N HE7C I 8 50@ J ; 8 : 8' 5 ; 8' A6 C78 :' J ' C<FG : 8 8B' 6 58 : 6690@ <' 5 ; 5' 75 ' G<J8 :' J ' B7 5 : 7 = E58B' <?8 :' ' F 668 :' : 8 ' <>' : <C I E : >BC8@ @B' J ; 8 : 8' 8 : < 7<@' ; B' G : <BEC8B' : E5 ' 7@5<' J ; 7C ;' 5 ; 8' A6 C78 :' J ' G : 8 8B' B<J@@ @B' <E5' <>' J ; 7C ;' 75' C<E6B' <@69' 8L5 : 7C 58' 75 86>' = 9' ' 8?8 : 8' 5 : EAA68$

; : <EA ; <E5' 5 ; 8' ? 6689@ 7@' C<@!E@C57<@' J75 ;' 5 ; 8' $ ' 2=' M ' 5 ; 8 : 8' : 8' 7@@EF8 : = 68' '2 ' = 2 & ' J ; 7C ;' 88F' @8?8 :' 5<' ; ?8' = 88@' =: B8B' = 9' A6 C78 :$; 8 8' = 7& : 8' >< E@B' : 7A ; 5' EG' 5<' 5 ; 8' = 8 ' <>' 5 ; 8' 8L7 57@A' A6 C78 : $; 5' 7 ' 5<' 9@ 5 ; 89' : 8' >< E@B' 7@' G<5 ' J ; 7C ;' J8 : 8' @<5' <@69' C<?8 : 8B' = 9' 7C8' BE : 7@A' 5 ; 8' J ; <68' <>' 5 ; 8' G8 : 7<B' 7@' J ; 7C ;' 5 ; 8' @C78@5' A6 C78 :' <>' < 5 '

8L58@B8B' 5< ?:8 0' = 5' ; ?8' =88@' C<?8:8B' =9' 75' 7@' HE758' :8C8@5' 57F8 $ &6 C78:' F<?8B' <?8:' 5;8F0' G:<= =690' A8 ' =8><:8' 5;8' A:8 5' A6 C78:'>7668B' 5;8' ? 66890' @B0' ><:' EA;5' J8' I@<J' 5< 5;8' C<@5: :90' 75' ; ' B<@8' 5;8' F8' 6F< 5' 8?8:' 7@C8$ 850' 5< 66' GG8 : @C80' 7C8' ; ' @8?8:' 2 $ '5;8' = '<:0' 7>'75' ; ' B<@8' <0' 75' ; ' =88@' B<@8' < 58@B8:690' 5; 5' 5;8' F :I ' ; ?8' =88@' E= 8HE8@569' <=6758: 58B$

%<J0' J;76 5' 75' F 9' :8 B769' =8' BF7558B' 5; 5' 5F< G;8:7C' C57<@' 7 ' C G =68' <>' C<FG685869' 8>> C7@A' >88=68' 5: C8 ' <>' A6 C78: 8:< 7<@0P' J8' C @@<5' 7@' 5;8' G:8 8@5' 7@ 5 @C8 ' BF75' @9' F<:8$;8' C<@57AE<E ' E:> C8 ' 5< 5;8' = ' J;7C;' :8' ;7A;69' G<67 ;8B' @B' =8 :7@A' >7@8' 5:7 57<@ 0' ;<J' 5; 5' E@0' >:< 50' @B' J 58:0' ; ?8' B<@8' ?8:9' 675568' EG<@' 5;8F' 7@C8' 5;8' 7C8' B8G :58B$ 5' J<E6B' =8' = E:B' 5< EGG< 8' 5; 5' 5;8 8' G<J8: ' ; ?8' =88@' =68' 5<' :E=' <E5' ' 5: C8 ' <>' 7C8 C57<@' M7>' 5;8' 5: C8 ' J8:8' <5;8:' 5; @' ?8:9' >88=68M' 7@' <@8' HE :8' 9 :B0' J;8@' 7@' 5;8' @8L50' EG<@' 5;8' F8' :<CI0' 5;89' ; ?8' =88@' E@ =68' 8?8@' 5<' :<EA;8@' 5;8' E:> C80' <:'A85' :7B' <>'>7@8' C: 5C;8 $ 5' 7 ' B<E=69' 7FD G< 7=68' 5<' EGG< 8' 5; 5' 5;8' :<CI E:> C8 ' J8:8' E@7><: F69' A:<E@B' B<J@' =9' 7C80' @B' 5; 5' 66' 5;8' 7@8HE 67578 ' 88@' 5' 5;8' G:8 8@5' 57F8' :8' 5;8' :8 E65' <>' E= 8HE8@5' B8C<FG< 757<@$ ' B<' @<5' 5;7@I' @9' <@8' J766' ; ?8' 5;8' ; :B7;<<B' 5<' 8:5' 5;8' C<@5: :9$

5' 7 ' 5 58B0' 5;8:8><:8K $; 5' 5;8' A6 C78: 8:<B8B' :<CI ' 7@' 5;8' (6689' <>' < 5 ' :8' C;78>69' C; : C58:7 8B' ;9' 6 6 ' @B' G:7@C7D G 669' =86<@A' 5< 5;8' C6 ' 58:F8B' 2 ' Q$; 5' 5;8:8' :8' 8L FG68 ' <>' $ ' ' 7@' 5;8' ? 66890' 5; 5' 5;89' :8' : :8' 7@' C<FD G :7 <@' J75;' 5;8' $ ' 2 C' @B' 5; 5' 5;89' :8' F< 569' ><E@B' EG<@' 5;8' >6<<:' <>' 5;8' ? 66890' <:' 7@' G6 C8 ' J;8:8' 75' 7 ' @ ::<J8 50' <:' J;8:8' E@E E 6' <= 5:EC57<@ ' ; ?8' <CCE::8B$ $; 5' 5;8:8' :8' 7@D @EF8: =68' @AE6 :' :<CI E:> C8 ' M7@58:F7@A68B' J75;' 5;8 8' A6 C7 58B' E:> C8 ' EG<@' 5;8' >6<<:' @B' <@' 5;8' 7B8 ' <>' 5;8' ? 6689M' J;7C;' C @@<5' ; ?8' =88@' G:<BEC8B' 7@C8' A6 C78:' C<?8:8B' 5;8' :<CI $ 4<:' 5;8' =8 :7@A' <>' 5;8 8' > C5 ' EG<@' ' :$ 9@B 66R' 5;8<:90' ' FE 5' @<J' :8D C G75E6 58' >:<F' ; G58:' ($

@' 5;8' G:867F7@ :9' :8F :I ' 5' GG$ 2Q 0' >58:' GG8 67@A' 5<

' ' 4 ' (!' ' ' *)1 ! ((<' ( ) %'

9$ B 3 ' ' J866' '3 9')' C<@58@B' 5; 5'7>' 5;8' 8@57:8' ? 6689' ; B' =88@' 8LC ? 58B' =9' A6 C78: 0'5;8' E:> C8' <>' 5;8' :<CI ' J<E6B' ; ?8' =88@' ' F<<5;' ' A6 0' >:<F' <@8' 8@B' 5<' 5;8:0' J ;8@' 5;8' 7C8' :857:8B$P' %<J0' ' ; ?8' >: @I69' BF7558B' M@<58' 5<' G$ Q N' 5; 50' A7?8@' E>>7C78@5' 57F80' E@0' >:< 50' @B' J 58:0' :8' C G =68' <>' B8 5:<97@A' ;7A;69' A6 C7 58B' E:> C8 0 =E5' ' J766' @<5' BF75' 5;8' G< 7=76759' <>' EC;' G8:>8C57<@' <>' A6 C7 57<@' ' ' ; ?8' !E 5' 7@B7C 58B' =87@A' C<FD G685869' 8>> C8B' M 90' 5' ;87A;5' 8LC88B7@A' ' >885N0' J ;768' ' >8J' 9 :B' 6<J8:' B<J@' 7C8 F :I ' :8' 88@0' @B' 88@' 8?8:9D J;8:8$ 4<:' 75' 7' J866' I@<J@' 5<' 66' J;<' ; ?8' C: F=68B' F<@A 5' 5;8' 6G 0' 5; 5' 5;< 8' F<E@5 7@' :8' @<5' A6 C7 58B' >:<F' EF F75' 5<' = 8$;8' F :I ' <>' 5;8' A:8 5' A6 C78:' <>' 5;8' <6B8@' 57F8' 8L58@B' EG' 5<' C8:5 7@' ;87A;50' @B' 5;8@' 5;89' C8 8$;7' 7' 5;8' C 8' 5; :<E+<E5' 5;8' 6G' A8@8: 669$;8' 67F75' <>' A6 C7 57<@' 7' E E 669' G6 C8B' 5' =<E5' j ' >885$ =<?8' 5;7' 67F75' 5;8' F<E@D 5 7@' :8' F<:8' <:' 68 ' :EAA8B' @B' @A7B :$ 86<J' 750' 5;8' 5: C8' <>' 5;8' A6 C7 6' G8:7<B' :8' F<:8' <:' 68 ' GG :8@5$ =<?8' 750' 9<E' 88I' 7@' ? 7@' ><:' A6 C78: 8:<B8B' :<CI $'>P' 86<J' 750' 5;89' :8' ><E@B' 6F< 5' 8?8:9J;8:8$ 8:8' 7' 5;8' 8?7B8@C8' <>' A 7S' EG<@' 5;7' G<7@5[K

Y' " 5#2' =7A643 6-9 :5' 6' 4<5' %I9' 9' 69;#L5:' 8 4<' 4<595' 36; 564' ;<3#3;N 45#9,' #5;7#: 6?' 4<5' %5 5%7.' 4<5' ;5' 6' I394 4=59' ' ' ' <7A936:9' 7.' .554' 3L7 5' 4<5' I#59564' %5 5%7.' 4<5' ?%3; 5#,' .3#AI' 4783#:9' 4<5 # 9A==49,' 85' .6:' 4<5' 9:59' 7.' 4<5' =7A643 69' .A##785:,' 9;#34;<5:,' 36:' I7%9<5:,' 6' 5 3;4%2' 4<5' 93=5'=3665# 39' 4<5' 9A#.3;59' 7 5# 8<;<' 4<5' ?%3; 5#9' I399' 34' I#59564' <595' =3#J9' 3#5' 39' %5?L%5' 36:' ;%53# 47' 765' 8!<7' 9' .3=%3# 8 4<' ?%3; 3% 4#3;59' 39' 3#5' <5#7?%2I<;9' 47' 4%C' " ?2I436' 9;<7%3# % 6:55:,'=7#5' 97,Q '.7# <5' 674' 76%2' #5;7?6G59' 4<5 # I#5956;5,' LA4' #53:9' 4<5 # =5366?' 34' 3' ?%36;5' 3 ' $' ' '9$ $' $ ' ' $' ' $' ' ' & $' ' ' $ ' ' '2 ' $' 2 & ' &' $' 2 ' 2'$' 2 $ ' ' 3 2 ' ' &

P' 88' G$ Q$

>' 5'7' @<50' <>' C<E: 80' F8 @5'5; 5'5;8:8' :8' @<' 5: C8' <>' A6 C78: C57<@' =<?8' ' >885' EG<@' :<CI ' =<E@B7@A0' <:' E@"<E@B8B' =90' 5;8' 6 '' A6 C78: $;8:8' :80' ><:' 8L FG680' F @9'7 6 @B' <>' :<CI' 7@' 5;8' 6G 0' E::<E@B8B' =9' A6 C78:0' 5' 868? 57<@' C<@D 7B8: =69' 8LC88B7@A' ' >885' J;7C;' :8' ;7A;69' A6 C7 58B$ ' :8>8:' 5<' 5;< 8' F<E@D 5 7@' J;7C;' :8' J 9'>:<F' 5;8' 8L7 57@A' A6 C78: 0' @B' J;7C;' ; ?8' @8?8:' =88@' 7@>6E8@C8B' =9' 5;8F$

G<J8:' A: BE 669' :86 L8 0 @B' >7@ 669' 5;8' 8:<B7@A' A8@5' HE75 ' 5;8' F<E@5 7@ ' 65<A85;8:0 @B' 5;8' A: @B' 8>>8C5 ' J;7C;' 75' G:<BEC8B'.@' 5;8' 8 :678:' G<:57<@' <>' 75 ' C<E: 8' 8@57:869' B7 GG8 :$3P' E5' B<8 ' 5;7 ' C<@C6E 7<@' A:88' J75;' 5;8' > C5' 5; 5;8' ? 6689 ' :8' E E 669' J7B8:' K FEC;' J7B8:K 5' 5;87:' F<E5; ' 5; @' 86 8J;8:80 @B' 5; 5' 5;8' =8B ' <>' 5;8' ? 6689 ' 5' 5;87:' F<E5; ' :8' 5' '6<J8:'68?86' 5; @' 5' 5;8' EGG8:' 8L5:8F7578 '^ >' 5;8' A6 C78: ' ; B' >6<J8B' 2 ' 5;8' ? /89 0 5;8 8' > C5 ' F7A;5' =8' 8LG67C =68' 0 =E5' 5;89' :8' E@7@58667A7=68' 7>' 5;8' ? 6689 ' J8:8' 8LC ? 58B' =9' A6 C78: ' J;7C;' >6<J8B' 9 ' 5;8F$

;8' F<E5; 0 5;8' =8B 0 5;8' J 66 0 @B' 5;8' 58:F7@ 57<@ ' <>' 5;8' ? 6689 0 @B' 5;8' 6<G8 ' <>' 5;8' F<E@5 7@ ' J;7C;' =<E@B' 5;8F0 G:<D C6 7F' 67I8' 5; 5' 5;8' G:8 8@5' F<B8667@A' <>' 5;8' 6G ' ; ' =88@' <@69' 67A;569' F<B7>78B' =9' A6 C78: $ 5' J<E6B0 ;<J8?8:0 =8' E@:8 <@ =68' 5<' C<@C6EB80 =8C E 8' EC;'7 ' 5;8' C 80 5; 5' A6 C78: ' :8' 7@C<FG858@5' 5<' 8LC ? 58' ? 6689 ' E@B8:' ' C7:CEF 5 @C8 0 @B0 =8><:8' 5 I7@A' 68 ?8' <>' :<>8 <:' 9@B 660 75' 7 ' <@69' BE8' 5<' ;7F' 5<' 8L F7@8' ;7 ' <G7@7<@ ' EG<@' 5;8' E=!8C5$ 8' 7 0 67I8' :<>8 <:' F 90 ' A:8 5' =8678?8:' 7@' <>5' G6 C8 $ 8' =8678?8 ' 5; 5' A6 C78: ' @<5' <@69' 8:<B8' <>5' :<CI ' F<:8' : G7B69' 5; @' ; :B' <@8 ' MJ;7C;' 7 ' ' :8 <@ =68' =8678>N0 =E5' ;8' C<@ 7B8: ' 5; 5' 665;8' C;78>' 7@8HE 67578 ' J;7C;' :8' @<J' 88@' 7@' ? 6689 ' 5; 5' ; ?8' =88@' 8:<B8B' =9' A6 C78: ' :8' BE8' 5<' 5;8' A:8 58:' <:' 68 ' :8 7 5 @C9' <>' 5;8' :<CI ' 5<' 5;8' C57<@' <>' $ ' ' Y'Y)8:8 75 ' =8B' E@7><:F' 7@' 5;8' >7: 5' 7@ 5 @C80 5;8' A6 C78:' J<E6B0 7@' F9' ' 2 ' 5;8' 7@8HE 67578 $3F1' <J0 ' C<E6B' @<5' B7>>8:' A:8 569' >:<F' ':$ 9@B /0 7>' ;8' J8:8' 5<' 9' 5; 5' A6 C78: ' FE 5' 8:<B8' <>5' :<CI ' F<:8' : G7B69' 5; @' ; :B' <@8 0 @B' 5; 5' 5;89' F7A;50 7@' C<@ 8D HE8@C80 E657F 5869' G:<BEC8' 7@8HE 67578 0 7>' 85' 5<' J<:I' EG<@' ' F<<5;' E:> C8' C<@5 7@7@A' =<5;' ; :B' @B' <>5' G6 C8 $ E5' ;8' A<8 ' > :' =89<@B' 5;7 $ 5' 7 ' @8C8 :9' ><:' ;7F' 5<' 8LG6 7@' ;<J' 75' C<F8 ' 5< G ' 5; 5' EC;' F 8 ' :8' 68>5' =8;7@B' ' 5; 5' 5' <@5 65<0 5' 5;8' 8@5: @C8' <>' 5;8' (6689' <>' < 5 0 <:' 5;< 8' EG<@' J;7C;' 5;8' C 568 ' <>' 7<@' 5 @B$;8' ? 6689 ' <>' < 5 ' @B' <>' 5;8' ;<@80 ;8' 9 0 ; ?8' =88@' 8LC ? 58B' =9' A6 C78: 0 985' ;8:8' :8' 5;8 8' <= 57@ 58' C: A ' 5 @B

Q ! "(!' ! ' 4 ' (!

7@A' 7@' 5 ; 8' ?8 : 9' C8@5 : 8 ' <>' 5 ; 8' ? 6689 $' ; 89' F @ 5' ; ?8' =88@' 8LD G< 8B' 5<' 5 ; 8' >E6' ><: C8' <>' 5 ; 8' A6 C78 : ' 0 @ 90' 5 ; 8' 7C8 5:8 F ' J8 : 8' 8?7B8@569' G675' =9' 5 ; 8 F 0' @B' ; B' 5<' >6 < J' EG<@' 875 ; 8 :' 7B8' @B' <?8 : 5 ; 8 F 0' Z E:8B6903' 9 ' ' :$' 9@B 660' Y' ' A6 C78 :' ' C< F G858@5' 5<' :8 F <?8' EC ;' = ::78 : 0' @B' 5 ; 89' G :<= =69' ; ?8' =88@' A:<E@B' B<J@' 7@' <F8' C 8 ' 5 ; <E @B ' <>' >885$' E5' =87@A' <>' ' F<:8' :8 7 57@A' F 58 :7 6' 5 ; @' 5 ; 8' B! C8@5' :<CI 0' 5 ; 89' J8 : 8' @<5' A:<E@B' B<J@' 5<' 5 ; 8' 68?86' <>' 5 ; 5' :<CI$3P' L F7@ 57<@' <>' EC ;' F 8 ' ; ' 68B' F8' 5<' ><: F' ' ?8 : 9' B7>>8 : 8@5' <G7@7<@$' ; 8' C<@5<E: ' <>' 5 ; 87 :' :<CI 0' EG<@' 5 ; 8' 7B8 ' <GG< 8B' 5<' 5 ; 8' B7 : 8C57<@' <>' 5 ; 8' >6 < J' <>' 5 ; 8' A6 C78 : 0' :8' >: 8HE8@569' >6 558 : 0' @B' EAA8 57?8' <>' ' A7B 58 :' B8A : 88' <>' =: 7<@0' 5 ; @' 5 ; 8' B! C8@5' @B' 6< J8 :' :<CI $' ; 89' ; ?8' =88@' 6< J8 : 8B' ' @<5' 68 0' 5 ; @' 5 ; 87 :' E: :<E@B7@A $' 85' 5 ; 8' 7@B7C 57<@ ' :80' ' ':E680' 5 ; 5' 5 ; 8 8' <=5 : E 7?8' C: A ' ; ?8' <@69' =88@' 6< J8 : 8B' 5<' ' 5 : 7>67@A' 8LD 58@50' @B0' F< 5' C8 : 5 7@690' @<5' 5 ; <E @B ' <>' >885$' 5766' 685' E ' EGD G< 80' ><:' 5 ; 8' I8' <>' :AE F 8@50' 5 ; 5' 5 ; 8' B! C8@5' :<CI ' J8 : 8' C5E 669' <>58 : 0' @B' 9 ' A:<E@B' B<J@' ' ; E@B : 8B' <:' F<:8' >885' EG<@' 8 C ;' 7B8' <>' 5 ; 8' ; :B' C: A 0' J ; 7C ; 0' 7@' C<@ 8HE8@C80' =8C F8' 5 ; 5' F<E@5' =<?8' 5 ; 8' 68?86' <>' 5 ; 87 :' E: :<E@B7@A $' ; 8' B! C8@5' :<CI ' J<E6B 5 ; 8@0' CC<: B7@A' 5<' F 9' <G7@7<@0' ; ?8' =88@' G:<B7A7<E 69' 8 :<B8B0' 66' 5 ; 87 :' @A68 ' J<E6B' ; ?8' =88@' <=6758 : 58B' 0 5 ; 89' J<E6B' ; ?8' =8C<F 8' 8LC88B7@A' >6 50' @B' EC ;' >: F ' ' 5 ; 89' J<E6B' G:8 8@5' J<E6B' =8' C ; : C58 : 7 57C' <>' ' ; 7A ;' B8A : 88' <>' A6 C7 57<@$' 85' J 8' >7@B' 5 ; 5' EC ;' 7 ' ' 5 ; 8' C 8$' ; 8' :<CI ' B! C8@5' 5<' 5 ; 8' C: A ' :8' >: 8HE8@569' ' >6 50' ' =: B8B' 5 ; @' 5 ; 8' C: A 0!P' @B0' 5<' 66' GG8 : @C80' 5 ; 87 :' E: D > C8 ' ; ?8' @<5' =88@' 6< J8 : 8B' F<:8' 5 ; @' ' ?8 : 9' >8 J' >885$' ; 8' C<@D C6E 7<@ ' :8' 7@8?75 =68' 7@' EC ;' C 8 ' 5 ; 5' 5 ; 8' B! C8@5' :<CI ' ; ?8' E>>8 : 8B' ' 5 ; @' 5 ; 8' <=5 : E 7?8' C: A 0' @B' 5 ; 5' @9' : 8 6' <:' 7F A7D @ : 9' <>5@8 ' <>' :<CI' ; ' @<5' 7 58B' A6 C78 : 8 :< 7<@' 5<' 5 ; 8' 8L58@5' EF 8B' =9' ' :$' 9@B 66$

; 8' 8@<: F<E ' F<E@5' <>' 8LC ? 57<@' EF 8B' =9' ' :$' 9@B 66' 7 ' >E:5 ; 8:' CC<E@58B' ><:' =9' ; 7F' EG<@' 5 ; 8' EGG< 757<@' 5 ; 5' A6 C78 :

P' $ ' ' ' C50' 20' G$ Q $'
7P ' B<@<5' I@<J' @' 7@ 5 @C8' J ; 8 : 8' 5 ; 8' : 8?8 : 8' 7 ' 5 ; 8' C 8$

6# 7 / # ' 7) ' F <7' ' " ; !' " <' ( )'" " ! ' '

:8 C<FG858@5 5< Z:<<5 F 8 ' M<>':<CIN =<B769 J 9$3P 8 88F ' 5< >886 5; 5 F8:8 A:7@B7@A0 : G7@A0 @B G<67 ;7@A J<E6B @<5 =8 8HE 6 5< 5;8 G:<BEC57<@ <>'? 6689 0 5;<E @B ' <>'>8855 7@ B8G5;0 7@ @9 :8 <@ =68 68@A5;' <>'57F80 @B <'7@?<I8 ' 5;7 ' HE7CI8:' G:<C8 ' 5< A85 ;7F 86>'<E5 <>'5;8 B7>>7CE659$) ;8@ @B ;<J ' :$ 9@B 66 =8D C F8 G< 8 8B <>' 5;7 ' 8L5: <:B7@ :9 7B8 ' ' ; ?8 @< F8 @ ' <>' 5866D 7@A$ <FG :7 <@ <>'5;8 ><66<J7@A G A8 ' J<7BB 68 B <@8 5< EGD G< 8 5; 5 75 J ' CHE7:8B G< 58:7<:' 5< 5;8 GE=67C 57<@ <>' ;7 ' ' &' $ ' [K

Y <5 %?<45# :5<#9 9 9;345#5:' <2 4<5 8 6:9 .3# 36:' 8 :5 7 5# 4<5 ?%3; 5#,' 9A%2 6?' 4<5 IA# 42 7.' 49 9A#.3;5 7795 9<6?%5 #34%59 34 6N 45# 3%9 :786 4<5 9:59 7.' 4<5 =7A6N 43 69,' 36:' .3%9 AI76 4<5 ;5 8<5#5 4 47A;<59 4<5 #7;J9 3#?5 #7;J9 3#5 ;764 6A3%2 %54 %7795,' 8<;< ;7=5 FA=I 6?' .#7=' %5:?5 47 %5:?5,' 4<5 ;7<59 76 7.' 97=5 L5 6?' I#77.' 3?3 694 4<5 9<7;J9 8<;<' 4<52 5 I5#56;5 M 8<%5 74<5#9,' 8<56 4<52 <4 4<5 #7;J9,' <A#94 %J5 L7=L-9<5%9,' 36:' 9<785# 4<5 #.#3?=5649 AI76 4<5 ;5 <A9 4<5 ?%3; 5# 9 6;5993642 %73:5:' 3%76?' 49 L7#:5#9 8 4<' 4<5 #A69 7.' 4<5 =7A643 69 8<;<' %= 4 4 PQ ' ' &' $ ' ' *<3145# 76 7#3659,' I ' 'R& D

K' 6 4<5 394 TA3644 59 7.' =7#365-=3445# 8<;<' ;A=L5#9 =362 7.' 4<5 3%529 85 <3 5 3%97 9A??59N 4769 39 47 4<5 =3?64A:5 7.' 4<5 5#79 76 8<;<' <39 43J56 I%3;5 <9 =7#365-=3445#,' =7#57 5#,' ' ' ' :5# 5:' .#7='4<5 .3% 6?' 7.' #77J9 .#7='4<5 5=656;59 AI76 4<5 ?%3; 5# M 4 9 3%97 ' ' ' &' $ ' ' ' 2'$ '=2' &' $ ' ' ' &' <9 3;;7A649 .7# 4<5 =3?64A:5 7.' =362 7.' 4<595 36;564 =7#3659,' 8<;<' :345 .#7='3 I5#7:' 8<56 3%=794 3%4<5 =7A643 69 85#5 ;7 5#5:' 8 4<' ;5 36:' 9678,' 36:' 8<56 ;7695TA5642 4<5 TA3644 2 7.' =7#365-=3445# :5# 5:' .#7='4<5 63J5:' ;#5949 ;3667 4 <3 5 L556 ;769:5#3L%5 P 4 Q ' $ ' ' ' ;4' & (' I ' &

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" $ ' O ' C5$ 0 G$ Q $ 5 ' 88 G$ Q2 $

QE

! "(!' ! ' 4 ' (!

5;8' 8L7 57@A' A6 C78: ' <>' 5;8' 6G $P' ;87:' @AE6 :759' 7 ' ' C8:5 7@' G:<<>' 5; 5' 5;89' J8:8' ;<F 8' 2E ' 5;8' A6 C78: 0' @B' J8:8' @<5' 5: @ D G<:58B' ' 5;8F$ 4<:0' 7>' 5;89' ; B' =88@' ><:C8B' 6<@A' E@B8:@8 5;' 5;8' 7C80' 5;89' J<E6B' F< 5' C8:5 7@69' ; ?8' =8C<F 80' 5' 5;8' 68 50' E=' @AE6 :0' <:' :<E@B8B' <:' C: 5C;8B$ 5' 7 ' J 866' I@<J@' 5; 5' 5;7 ' 7 ' J ; 5' 5 I8 ' G6 C8' 5' 5;8' G:8 8@5' 57F 8' 7@' :8A :B' 5<' B8=:7 ' E@B8:D @8 5;' A6 C78: 0' @B' 5; 5' 5;8' G8==68 ' @B' =<E6B8: ' J ;7C;' :8' F<?8B' 6<@A' 7@' EC;' ' J 9' CHE7:8' ' C; : C58:' <>' 5;87:' <J@' J ;7C;' 7 ' E@F7 5 I =68$;8' F<: 7@8 0' 5;8@0' B<' @<5' EGG<:50' ;E5' C68 :69' :8!8C5$ ':$ 9@B 66R ' @<57<@$ %<:' 7 ' 5;8' 8?7B8@C8' <>' 5;8' :<CI ' >:<F' J ;7C;' ;8' EGG< 8 ' 5; 5' F 8 ' ; ?8' =88@' Z:<<58B' J 9'3' 68 ' B7 57@C569' A 7@ 5' ;7F$ <J' C<E6B' 5;8 8' F 8 ' =8' =:<I8@' J 9' J75;<E5' @AE6 :' E:> C8 ' =87@A' 68>5' =8;7@B'^ @B';<J' 7 ' 75' 5; 5' 7@' 5;< 8' G6 C8 ' J ;8:8' A6 C78: C57<@' ; ' =88@' ' G<J8:D >E6' @AE6 :' E:> C8 ' :8' ' 9 '' [':$ 9@B 66' GG8 6 ' 5<' 5;8' ' 2 ' <>' 5;8' <6B' A6 C78: 0' @B' 5<' 5;8' 8@<:F<E ' 2 ' J ;7C;' 5;89' 8L8:58B' EG<@' 5;87:' =8B 0' 5<' 8LG6 7@' ;7 ' Z' :<<57@A J 903' ' C<@>7B8@569' ' 7>' ;7 ' C 8' J ' C<F G6858 69' G:<?8B' 5;8:8=9$ 850' 7@' 5;< 8' G6 C8 ' J ;8:8' A6 C78: ' :8' @B' ; ?8' =88@' 5;8' A:8 58 50' @B' +;8:8' 5;87:' G:8 E:8' ; ' =88@' 5;8' F< 5' 5:8F8@B<E 0' @B' 8L8:58B' ><:' 5;8' A:8 58 5' 68@A5;' <>' 57F 80' J8' >7@B' 5;8' :<CI ' J ;7C;' ; ?8' =88@' J<:I8B' EG<@' :8' 5;8' F< 5' ;7A ;69' G<67 ;8B0' 5;8' F< 5' >6 5'7@' C<@5<E:0' @B' 5;8' F< 5' B8?<7B' <>' 66' @AE6 :759' J ; 5 <8?8:

5' 7 ' C68 G0' 5;8:8><:80' 5; 5' 5;8' 5;8<:9' <>' Z' <>5' G6 C8 03' ' GG678B' =9' ':$ 9@B 660' C @@<5' =8' E 5 7@8B0' @B' B<8 ' @<5' 7@' 5;8' 68 5' 7 5' E ' 5<' B858: F7@8' ;<J' > :' A6 C78: ' :8' C<F G858@5' 5<' 8LC ? 58' ? 6689 $;8' 7B8 ' 7 ' G6 E 7=68' 5; 5' <>5' :<CI ' F E 5' E>>8:' E@B8:' 5;8' A:7@B7@A' <>' A6 C78: ' F<:8' : G7B69' 5; @' ; :B' <@8 0' @B' F 9' =8' BF 7558B' 0' =E5' 75' J 766' =8' ;<J@' G:8 8@569' 5; 5' 5;8:8' :8' 5767@A ' 5<' =8' 7B' EG<@' 5;8' <5;8:' 7B8$;8' @<57<@' 5; 5' A6 C7!: ' :<<5' J 9

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A6 C78 : ' F 7A ; 5 ' 8?8@ ' A : 7@B ' <E5 ' ? 6689 ' <> ' ' G8CE67 : ' I 7@B $ EC ; '
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' ; ?8 ' B? @C8B ' <@69 ' ' > 8 J ' <> ' 5 ; 8 ' F <: 8 ' <=?7<E ' <= !8C57<@ ' 5 <
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5 ; 8 ' E : > C8 ' G : 8G : 5<: 9 ' 5 < G<67 ; 7@A$

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A6 C78: J<E6B 7@ C<@ 8HE8@C8 Z 55 7@ @ E@E E 6 5;7CI@8 0 5;E
8L8:C7 7@A0 >58: 75 B8 C8@50 @ 8L5: 8:< 7?8 G<J8:$3 8:8 J8 A85
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8@7@A F7A;5 :7 8 >:<F5;8 58@B8@C9 5< Z ;8 G EG$3 ;8 ZE@E E 6 5;7CI@8 3=9 J;7C;;8 A85 ;7 ZBL5: 8:< 7?8 G<J8:03 7 8@57:869 C<@!8C5E: 60 @B0 !EBA7@A =9 5;8 A6 C78: <> 5;8 G:8 8@5 57F80 75 7 ?8:9 B<E=5>E6 7> 75 ; B @9 8L7 58@C8 J; 58?8:$ > 5;8 :<>8 <: C<E6B G<7@5 5< 7@A68 A6 C78: J;7C;7 B<E=68B 7@ 5;7CI@8 5;:<EA;:85 :B 57<@0 ;8 J<E6B F 58:7 669 ><:57>9 ;7 :AEF8@50 ;E50 7@5;8 = 8@C8 <> @9 EC;8?7B8@C80 J8 F 9=8 G8:F7558B 5< B<E=5 7>5;858 7 FEC;><:C8 7@ ;7 7B8 $P

8C<@B690 5;8 A:8 5 = 7@ J;7C;:<>8 <: F 9 ;8;8?8 J8:8 8LC ? 58B =9 A6 C78: 0> :8 EF8B 5<;?8 =88@ C<<G8B <E5 <> :8 >7668B =9 8 G8C7 669 <>5 5: 5 0 J;7C;J8:8 :8F<?8B J75;C<FG :57?8> C76759 0 @B 5 : 57B :58$ (8:9 8F7@8@5 A8<D 6<A7 5 B7 =8;8?8 7@5;8 8L7 58@C8 <>5;8 8 8 G8C7 669 <>5 :8 $f 5;8: 0 A 7@0 <>8:8?7B8@C8 J;7C;68 B E 5< =8678?8 5; 5 <F8 <> 5;8 A:8 5 6G7@8 6 I8 = 7@ 8L7 58B B8-<:8 5;8 A6 C7 6 G8:7<B$d E5 685 E EGG< 8 5; 5 5;89 :8 66 J:<@A0 @B 5; 5 5;8 :<>8 <: 7 :7A;5$ 85 E EGG< 80 5<<0 5; 5 :85 :B 57<@ C5E 669 5;8 5;7CI@8 <>5;8 A6 C78: 0 I7@A 66 5;7 ><: A: @58B0 75 7 5766 7@C<FG:8;8@ 7=68 ;<J 5;8 @C78@5 A6 C78: <>5;8 ;<@8 F @ A8B 5< 8LC ? 58 5;8 =8B <>5;8 I8 <> &8@8? 5<5;8 B8G5; <> 2 >885 M<GG< 758 5< ?7 @N0 J;8@75 J E@ =68 5< :8F<?8 58@5; G :5 <>5; 5 F<E@5 >:<F5;8 ? 6689 <>5;8 ;<@8 M 9 =85J88@ 7<@ @B 78::8N 0 ><: 75 J J<:I7@A ><: A:8 58:

P <<@8C @C<@ E65;8 8LC8668@5 F G J;7C;CC<FG @78 7857@ R @B & 5 6B7R ! 9 & J75;<E5 887@A 7@ F<F8@50 >:<F5;8 B7 G< 757<@ <> 5;8 F<: 7@8 0 5; 5 5;8 A:8 5 A6 C78:G> < 5 & 2 2 8@C80 @9 F 58:7 6 5;7CI8@7@A5;:<EA;:85 :B 57<@) 7FG< 7=68$ 5 C @ :8 B769 ;8 ;<J@5; 5 5;7 '= 2 >:8HE8@569 <CCE: 5<5;8 A6 C78: <>5;8 G:8D 8@5 57F80 J;8@5;89 G >:<F C<@>7@8B G6 C8 <@ 5< <G8@ G C8 MG6 C8 J;8:8 5;8 ? 6689 J7B8@N$

_ ;8 = 7@ <>5;8 6 I8 <> &8@8? 0 ; 8EC; 5860 ;E@0 VEA0 EC8:@80 VE:7C;0 <@ 5 @C80 85C$ 85C$

. 4<:8L FG680 88 5;8 :8F :I <> :<>$ 4 ?:8 EG<@5;8 I8 <> &8@8? 0 7@ $: ; 7 :C; $

d 7: 67 :68 98660 ><:8L FG68$ @ :8A :B5<5;8 6 I8 <> VE:7C;0 85C$0 88 ;7 02 & B 8B$0 GG$ 2 $

68@A5;' <>' 57F8# 7@' 5;8# ? 6689@ @B# @<# B<E=5' J75;' '$ '$ ' : 58# <>' F<57<@@ 5; @'75' J ' EG<@'5;8#=8B# <>'5;8# I8# <>' &8@8? $

' ; ?8# <>58@' J<@B8:8B@ C<@ 7B8:7@A' 5;8# 8L58@5'5<# J;7C;' :<D >8 <:' F 9# @B# 9@B 66' 68 @' EG<@' <>5' G6 C8 @5; 5' 5;89@ <:' <F8# <>' 5;87:' B;8:8@5 @ ; ?8# @<5'5;<EA;5'75' J<:5;' J;768# 5<# G<7@5' <E5' 8L FG68 @EG<@' ' F 66' @B# Z@G<@' ' 6 :A8# C 68@ <>' <>5' :<CI ' J;7C;'; ?8#=88@' 8:<B8B#=9#A6 C78:'5<# 'A:8 58:' 8L58@5'5; @' ; :B8:' :<CI '7@'5;87:'7F F8B7 58# ?7C7@759$ >' :<>8 <:' F 9#7'C<::8C5' 7@' EGG< 7@A'5; 5' A6 C78:' J8 :' J 9# <>5':<CI ' J75;' 2 $'A:8 58:' : G7B759'5; @' ; :B# <@8 @75' <EA;5'5<#=8 '?8:9# 8 9#5;7@A'5<# G:<D BEC8# 8L FG68 $ 85@ '> :' ' ' I@<J@'@<5 <@8# <>' 5;8# G:7@C7G 6' J:758:' EG<@'5;8# E=!8C5'; '8?8:' 558FG58B#5<# & '5; 5' A6 C78:' 8:< 7<@' G:<C88B' 5' @' CC868: 58B# : 58# EG<@' <>5' :<CI @ @B# 7' :85 :B8B#=9# ; :B# <@8 $ 5' ; ' =88@' :8G8 58B69' 8:58B@ <:' EF8B@5; 5' EC;'7'5;8# C 8@;E5' G:<<>' ; ?8#=88@' ?8:9': :869' B? @C8B$

);765';5;7'7';8# C 80$75' ; ' =88@' C<@57@E 669' :8F :I8B#=9' J:758:' EG<@' A6 C78: C57<@' MJ;<' ; ?8# @<5@ ;<J8?8:@ 55 C;8B# @9' G :57CE6 :'7FG<:5 @C8'5<#5;8#> C5N@5; 5' HE :5S ?87@' :8# CE5' B<J@@ =9'5;8# G A8# <>'7C8# <?8:'5;8F@5<#5;8# 68?86' <>'5;8# :<CI '7@' J;7C;' 5;89' :8# ><E@B$ WE :5S@ <@8# <>'5;8# ?8:9'; :B8 5' <>' C<F F<@69' B7>>E 8B# F7@8: 6@7'E@ =68#5<# :8 7 5'5;8# A:7@B7@A' <>' A6 C78:$ 5' ; :B@8 'B<8'@<5'G:8?8@5'75'=87@A'G<67 ;8B'B<J@'5<#5;8# F8# 8LD 58@5' '5;8# FEC;' 68 ' :8 7 5 @5' :<CI ' J;7C;' 8@C6< 8# 75$ >' 75' E>>8:8B# 68 ' 5; @' 75' E::<E@B7@A @'75' J<E6B@ <>' C<E: 8@ G:<5:EB8$ 5'B<8'@<5@=8C E 8#75'7'8:<B8B# O2 ' J75;'5;8# FEC;' <>58:':<CI$ %<'B7 57@C57<@'7' F B8#=9'5;8#A6 C78:@ @B#5;8#G:8 8@C8# <>'5;8# HE :5S 7'@<5' 8@ 7=68#5<#5;8#5<EC;'>:<F' @9'868? 57<@'<:'B8G:8 7<@$

>'A6 C78: 8:<B8B#:<CI ' C<@5 7@7@A'?87@' <>' HE :5S :8# 8LG< 8B# 5<#5;8#7@>6E8@C8' <>' E@@>:< 5@ @B# J 58:@75'7'@<5'6<@A'=8><:8#5;8# HE :5S=8A7@'5<' 8:5'75' EG8:7<:':8 7 5 @C9$ >'75'7'7@' A@87 @ 5;8# A@87 ' 7@' C<@5 C5' J75;'75' G88B769' E>>8: $ 7@E58# C: CI ' : B7 58# >:<F#5;8# !E@C57<@'<>'5;8#5J<' E= 5 @C8'<?8:'5;8# E:> C8# <>'5;8# J8 I8:' F 58:7 6$) 58:'8@58:'5;8#57@9'>7 E:8@ @B@ 8LD

G @B7@A$ E@B8:$ 5;8$ 7@>6E8@C8$ <>$ C<6B0$:8@B ' J 9$A: 7@$ =9$A: 7@0
E@576$ 5$68@A5;0$ ' 7@$ 5;8$$ CC<FG @97@A$
B7 A: F$ 5$ ' @B$ 0$675568$: ?7@8 ' :8$
><:F8B$ EG<@$ 8 C;$ 7B8$ <>$ 5;8$ HE :5S'
?87@WP
>0$ <@$ 5;8$ <5;8:$; @B0$ 5;8$ 8:<B8B$
:<CI ' C<@57@E8$5<$ 8LG8:78@C8$5;8$A:7@BD
7@A$ <>$ A6 C78:0$ @<5;7@A$ <>$ 5;7 ' I7@B$
:8 E65 $;8$ 58@B8@C9$ <>$ 5;8$ HE :5S$5<$ G:<5:EB8$ 7 ' 7@C8 @569$
C;8CI8B0$=8C E 80$ ' 5;8$ 67A;58 5$ E G7C7<@$ <>$ G:<5:E 7<@0$75$7 ' 5D
5 CI8B$=9$5;8$7C8$ J75;' 7@C:8 8B$ G<J8:$ >$=9$ @9$C; @C8$75$
=8C<F8 ' 868? 58B$ =<?8$5;8$ E::<E@B7@A$:<CI0$75$ $ ' &&578$
J87A;5$ <>$5;8$7C8$ >:<F$5;8$ E::<E@B7@A$:<CI0$ @B$5;7 ' C<@B757<@$
<>$ >> 7:' C<@57@E8 'E@576$=<5;' HE :5S$ @B$A@87 ' :8$=:<EA;5$5<5;8$
F8$68?86$
;8:8$7 ' ;5568$B7>>8:8@C8$<>$ <G7@7<@$ =<E5$5;8 8$ F 558: $ 5$7 '
G8:>8C569$J8/' I@<J@$5; 5$ G:<!8C57<@ 0$7@$5;8$=8B$<>$ ' A6 C78:$:8$
55 CI8B$=9$5;8$7C80$ @B$5; 5$B8G:8 7<@'8 C G8$ =: 7<@$5;:<EA;$5;8$
G:<58C57<@$ >><:B8B$=9$5;8$8F7@8@C8 5 8@C8$75$7 ' 5; 5$E657F 5869$
66$ @A68 ' @B$ 6F< 5$ 66$CE:?8 ' :8$ <=6758: 58B$>:<F$5;8$ E:> C8 ' <>$
:<CI 'EG<@$J;7C;$A6 C78: ' J<:I$ 8@C8$75$7 '5; 5$7@$ 'B7 5:7C5$J;7C;$
; '=88@$ 8?8:869$8:<B8B$=9$A6 C78:$ J8$ >7@B$5;8$:<CI ' F<:8$>6 5K'
5; 5$7 0$68 'C<@?8LK5; @$7@$<@8$J;7C;$; '=88@$68 '8:<B8B$
5$7 '8?7B8@50$5;8@0$5; 5$A6 C78:$ B<8 '@<5$ @B$C @@<5$B7A$ J 9$
7@5<$ <>5$G6 C8 '<CCEG97@A$ ' ;7 ' 7 ' @<5$ 'F 558:$ <>$
<G7@7<@0$=E5$ ' C8:5 7@590$ @B75 88F ' 5<$ F8$5<$=8$ 8@57:869$E@

P$ @'&:88@6 @B$ ' ; ?8$ 88@$A@87 ' C: CI8B$ J 9$>:<F$HE :5S ?87@' 7@$A6 C78:'
8:<B8B$:<CI 0$7@$5;7 'F @@8:0$5<$ 'B8G5;$<>$5J<7@C;8 ' @B$F<:8$);8:8$5;8$ F8$
?87@' '; B$;88@$G:<58C58B$>:<F$5;8$ 5F< G;8:80$5;89$J8:8$J75;<E5$5;8$675568$5:8@C;8 '
<@$8 C;$ 7B8$ <$5;8$ F8$8>>8C5$ 88$ &87I78$ ' '% 2 ' : @$ &8<6$
<<$ &6 A<J0$ $
5'Z$ @$B8 C8@B7@A$>:<F$5;8$ EF F75$<>$5;8$) 87 ;<F$<@$5;8$ 5;$<>$ EAE 5$6 5$
'><E@B0$@8 :$5;8$>6 @I '<>$<@8$<>$75 'A6 C78: 0$ ' ' &$ ' ' ' & '' '
$ 9 ' '9$ $' '$ '3 '2 ' '9 $ 2'3 '' 02 _ ' ' $3K 9@B 66R' 2 V
'' ' 0G1 $ ':$ 9@B 66R'58 57F<@9$7 '8 G8C7 669$? 6E =680$=8C E 8$;8$
7'=9$@<F8 @'G:8!EB7C8B$7@'> ?<E:$<>$5;8$?78J ' J;7C;' ' F' EGG<:57@A$

J :: @5 =68$ 5< 8:5% 7@$ 5; 8$ > C8$ <>' ' J866 C8:5 7@8B$> C5$67I8$5;7 %
5; 5$5;8$ G<<6 ' @B$ F 66$ 5 :@ ' 697@A$ 7@$:<CI = 7@ ' MJ;7C;' :8$
@EF8:<E '7@$ 6F< 5$ 66$ F<E@5 7@<E ' C<E@5:78 N$ <J8$5;87:'$ 8L7 58@C8$
5<5;8$ 8LC ? 57@A$G<J8:'<>'A6 C78:%$ F8:869$=8C E 8$A6 C78:'; 'G 8B$
<?8:'5;8$ G<5 ' J;7C;'5;89$<CCEG9% @B%$ 5< 9$5;8$ 68 5%$ 5<=8$ 7@D
!EB7C7<E '5< GG69$58:F '67I8$ Z C<<G7@A$ <E53 5< 5;8$:<E@B7@A$ @B$
G<67 ;7@A EG$ <>' 5;8$=8B ' <>' EC;'G<<6 %=8C E 8$5;< 8$58:F ' C<@?89$
@ 7FG:8 7<@$ 5; 5$7 ' 8@57:869$ 8::<@8<E $;8$;<66<J ' 7@$ J ;7C;'
EC;'G<<6 ' :8$ ><E@B$ J<E6B$ @8C8 :769$; ?8$=88@$ <=6758: 58B% @<5$
B88G8@8B% 7>'5;8$A6 C78:' ; B$ J<:I8B$><:' 'A:8 58:'68@A5;'<>'57F8P
:<>8 <:' F 9$;<6B ' 5;8$ B7:8C569$ C<@5: :9$<G7@7<@$ / @68 '
' F$8@57:869$ F7 5 I8@$7@$:8A :B$5<;7 '7B8 %;8$ EGG< 8 ' 5; 5$5;8$
=8B ' <>' 6F< 5$ 66$ G<<6 %5 :@ % @B$6 I8 % J;7C;'678$ 7@$ 5:E8$:<CI '
= 7@ %; ?8$=88@$ C<<G8B$<E5$<:'8LC ? 58B$=9$A6 C78: $ ' ':E68$
;8$ B<8 ' @<5$ C<@ 7B8:'5; 5$5;8 8$6 I8 '<CCEG9$;<66<J ' J;7C;' J8:8$
><:F8B$ 875;8:' 8@57:869$<:'7@$ G :5$5;:<EA;'EG;8 ? 6%<:' E= 7B8@C8%
N875;8:'<:'=<5;N%<:' @58C8B8@5$8:< 7<@%=E5$5; 5$5;8$6 I8 = 7@ ' :8$
7FG69$;<68 ' J;7C;' A6 C78:' ; ?8$ BEA$<E5$ <J$<:'7@$ J; 5$J 9$
5;8$A6 C78:' B7B$5;8$ J<:I%' ; ?8$@<5$5;8$F<5:8F<58$7B8 $ '5E:G$
5;8$:<>8 <:R'G A8 ' <?8:' @B$ <?8:'J75;<E5$A 7@7@A$5;8$ 67A;58 5$
C6E8$>' E5$ 'A 5;8:'>:<F'5;8$ ' ' &' $ ' ' !

P$ 7:' ; :68 ' 9866$:8F :I ' J75;'FEC;'><:C8%7@$5;8$ 5;' 8B$<>';7 ' 'G$ 1 %
Z);8:8$<GG<:5E@7578 ' :8$8@!<98B$<>' 887@A$G :5$<>' '? 6689$>:<F' J;7C;' 'A6 C78:' ; '
:85:8 58B$7@$;7 5<:7C 6$57F8 %@<'; 7@ ; G8B$;<66<J ' :8$C<@ G7CE<E $ '<F8 ; G8B$
G:<5E=8: @C8%5;8$ '7 '=8><:8$B8 C:7=8B% :8'>:8HE8@5% =E5$5;8$C<@?8: 8$
<>'5;8F%<:'<EG @B EC8: ; G8B$C ?7578 % :8$J @57@A$3 ;8$!E 5@8 '<>'5;8 8$<=D
8:? 57<@'7 ' E@B8@7 =68$;8$G8:E 6$<>' :<>8 <:' F 9R'G G8: ' J<E6B$68 B$ @9$
<@8$ G8: <@ 669$E@ CHE 7@58B$J75;'A6 C78: 8:<B8B$:<<I ' 5<C<@C6EB8$5; 5$5;8$:8?8: 8$
J ' 5;8$C 8K5; 5$ EC8: ; G8B$;<66<J ' J8:8$ =E@B @5%<:%7@$ <5;8:'J<:B %5; 5$
C<@C ?7578 'G:8B<F7@ 58B$

5' 'C @@<5>7@B$ @95;7@A$F<:8$8LG67C75$5; @$5;7 '[K Z ;8$A7 8 58:'@EF=8:'678$7@
=3 '><:F8B$=9$5;8$A:7@B7@A$<>'A6 C78: 7C8$3 ;7 '7 ' 7FG68$ 8:57<@%@<J'><:'
5;8$G:<<$ Z <F857F8 '7@$5;8$C<@?<6E57<@ ' <>'5;8$ 5: 5 'MC<@!<7@8B$J75;'G:8A6 C7 6
B8@EB 57<@ E= 8HE8@5$5<5;8$C<@5<:57<@ <>'5;8$=8B N$ <>58:'G :5 ' <>'5;8$<<7F5:9$
' ; ?8$=88@$ C<<G8B$<E5%=$ $ ' F<:8$A8@8: 669$5;89$J8:8$><:F8B$=9$5;8$A:8 58:'
5;7CI@8 ' @B$J87A;5$<>'A6 C78: 7C8$<@$ 2 9 ' ' BE8$5< '5<' J;7C;'75$7 '
@<J'<>58@$B7> CE65$<:'7FG< 7=68$5<>'7@B$5;8$C6E8$3K ' ' ! ' Q% G$ $

Q L' "

5; 5'75'J '>:<F'5;8'8L F7@ 57<@'<>'5;8' F 66'G<<6'';8'>7:5'C F8'5<'
5;8'C<@C6E7<@'5; 5'A6 C78:' C<<G8B'$<E5'; 7@'7@':<CI'05; 5';8'
J ' 5'>7:5'Z'5<<'57F7B'5<'7@C6EB8'5;8'6 :A8:'6 I8'03 @B'5; 5';8'
<<F7@A'C<@?7@C8B'5;8'6 :A8:'6 I8'<CCEG78B'5:E8':<CI = 7@0';8'7@D
C6EB8B'5;8F'7@'5;8'C 58A<:9'<>'6 I8'J;7C;'; B'=88@'><:F8B'=9'5;8'
A8@C9'<>'A6 C78:0'=8C E 8'A6 C78:' 6<@80'7@';7'<G7@7<@0'7'C G =68'<>'
8LC ? 57@A'5:E8':<CI = 7@

;8' F 668:'7B8';'='=88@';<J@'5<'=8'> 66 C7<E0 @B'75'F7A;5'
=8' 7B'5; 5'5;8'6 :A8:'<@80?:;7C;'7'=E765'EG<@'750@8C8 :769'> 66'
5;:<EA;$;7'7' C :C869'5;8'C 8$;8'><:F8:'B8 6'J75;' HE :8'
9 :B0 @B'5;8'6 558:'J75;' HE :8'F768 $ 'A6 C78:'J8'I@<J0' '
F 558:'<>'> C50G<67 ;8'B<J@' 'HE :5S?87@'7@'5;8' F8'J 9' '75'
B<8''='=8B'<>' <>5'67F8 5<@8$ 'G6 @8'J;7C;'7' B G58B'><:'G6 @D
7@A'J<<B' @ 9'CE5'5;:<EA;' '@ 76'7@' 'G6 @I'J;76 5'5 I7@A'<>' '
; ?7@A$ E5'5;8'G6 @8'7'E@ =68'5<'5 I8' ; ?7@A'<>' '<67B'F '
<>'7:<@0 @B'75'F7A;5'=8' 7B0J75;' <F8'G6 E 7=76759'0'5; 5''A6 C78:'
F7A;5'=8'8HE 669'7FG<58@5'7>'75' ; B'5<'J<:I'<?8:' HE :8'F768'<>'
HE :5S'7@ 58 B'<>' HE :8'>885$ <><:F''!E 5'7B8'<>'5;8'G:<= =76759'
<>''A6 C78:'G:<BEC7@A''6 I8 = 7@'7@'<@8'G6 C8'M7@'<>5' 5: 5 N0'J;8@'
BE:7@A'5;8' F80'<:''6<@A8:0'G8:7<B0'75'<@69' 67A;569'8:<B8'5;8' E:D
> C8' 5' @<5;8:'G6 C8'M; :B' 5: 5 N0'J8'<EA;5'5<'>7@B'<E5'5;8'8>>8C5'
J;7C;' :8' C5E 669'G:<BEC8B'=9'A6 C78:'J;8@'J<:I7@A'<?8:' 8:78'
<>' 5: 5''<>'E@8HE 6'; :B@8 0'J;8:8'5;8' 5:7I8'<>'5;8'=8B'C<7@C7B8'
J75;'5;8'B7:8C57<@'<>'5;8'F<57<@'<>'5;8'7C8$;8'7B8 0'7@B88B0'; '
<>58@'<CCE::8B'5<'F80'5; 5'7@ 7A@7>7C @5'HE :5S?87@'F7A;5':8 7 5'5;8'
A:7@B7@A'<>'A6 C78:'7>'5;89'J8:8'J<:I8B'EG<@'6<@A75EB7@ 669$ 5'
7'@<50'<>'C<E:80 @'8 9'5;7@A'5<'>7@B''?87@'<>'HE :5S'J;7C;'; +'
=88@'J<:I8B'EG<@'6<@A75EB7@ 669'><:''C<@ 7B8: =68'B7 5 @C8'0 @B'
'; ?8'@8?8:'<= 8:?8B'=8558:'8L FG68'5; @'5; 5'J;7C;'7'B8 C:7=8B'
7@'5;8'><66<J7@A'G : A: G;$

@' 10'EG<@'5;8' ;<:8'<>''>7<:B0 =<E5'@7@8'F768'5<'5;8'8 5'
<>'5;8' 85568F8@5'<>' 6 E ; ?@'7@' <:5;'&:88@6 @B0'; B'5;8'A<<B'
><:5E@8'5<'B7 C<?8:'5;8'>7@8 5'8L FG68'<>' $ ' * '),";7C;'';?8'
88@' @9J;8:8$;8'A:8 5'7@58:7<:' '' 'J '@8 :' 5'; @B0
@B''=: @C;'<>'75'C6< 8B'5;8'7@685'J75;' @'E@=:<I8@'J 66'<>'7C80

J ;7C67 J ' @8 :69 ' F768 C:< $;7 ' =: @C;' ; B ><: F8:69 >7668B 5;8 >7<:B0 @B ; B GG :8@569 C<?8:8B 5;8 G6 C8 5< J ;7C;' ' :8>8:' 5 @< ?8:9 :8F<58 B 58$:8F8@B<E ' 8?7B8@C8 ' <>'75 ' G< J8:'; B =88@ 68>5 =8;7@B$;8 A@87 ' EG<@ 5;8 ;<:8 ' J ' 6758: 669 68?8668B0 @B 8L58@B8B ><:';E@B:8B ' <>' 9 :B '7@ C<@57@E<E ' ;885 0 J75;' G<67 ;8B E:> C8 ' B8 575E580 <>' /' B85:75E 0 B7>>7CE65 5< J 6I' EG<@0 ><:' 5;8:8 J ' @<5;7@A 5< ::8 5 5;8 >885 J ;8@ 5;89 67GG8B$ @ 5;8 8 :<CI ' 5;8:8 J8:8 5J< A:8 5 ?87@ ' <>'HE :5S0 8 C;' 5; :88 5< ><E:' >885 5;7CI0 J ;7C;' 55: C58B @<57C8 5 ' C<@ 7B8: =68 B7 5 @C8 =9 5;87:' 8LC8 7?8 =:7667 @C9 J ;8@ 5;8 E@>8 /'EG<@ 5;8F$;8 8 : @ :<EA;69 G : 6686 5< 8 C;' <5;8:'><:' =<E5 87A;59 9 :B 0 @B 5; :<EA;<E5 5; 5 B7 5 @C8 5;87:' B7:8C57<@ ; B @8 :69 C<7@C7B8B J75;' 5; 5 7@ J ;7C;' 5;8 A6 C78:' ; B F<?8B$;8 A6 C78:' ; B G 8B <?8:'5;8F 5 @ @A68 <>' =<E5 `$ / G<@ 5;7 ' HE :5S F9 ; F F8:' B @C8B @B : @A0 @B F B8 C :C869 @9 7FG:8 7<@$ ' C;7GG8B J 9 5;8 A@87 ' J75;<E5 B7>>7D CE659$;8 A6 C78:' ; B J<:I8B EG<@ 5J< E= 5 @C8 ' <>' E@8HE 6 :8 7 5 @C9$ 850 7>' '67@8 ; B =88@ 5:85C;8B =85 J88@ 5;8 ;7A;8 5 G<7@5 ' C:< ' @9 ;E@B:8B >885 <>' 5;8 8 ;885 ' <>' :<CI0 ' B< @<5 5;7@I 5; 5 @9 G :5 <>'5;8 :<CI J<E6B ; ?8 =88@ B8G:8 8B <@8 ><<5 =86<J 5;8 C<:B$;8 HE :5S0 7@ 58 B <>' 5 @B7@A EG 7@ :7BA8 0 ' ' 5;<EA;5 75 F7A;5 ; ?8 B<@80 J ' CE5 B<J @ 5< 5;8 F8 68?86 ' 5;8 A@87 C 5;8 I88@8 5 C:E57@9 C<E6B @<5 B858C5 5;8 68 5 B7>>8:8@C8$ 5 J ' 8?7B8@50 >:<F 5;8 8@57:8 <=6758: 57<@ <>' ><: F0 5; 5 5;8 8 :<CI ' ; B B 8@<:F<E ' G<J8:' 8L8:58B EG<@ 5;8F0 @B 5; 5 ' @<5 7@C<@ 7B8: =68 B8G5;' <>' :<CI'; B =88@ :8F<?8B$ 5 7 ' 7F F 58:7 6 J ;85;8:' 5;8 8>>8C5 ' ; B =88@ G:<BEC8B =9 C<FG : 57?869 67F758B ><:C8 G:8 B <?8:' @ 8@<:F<E ' 68@A5;' <>'57F80 <:' J ;85;8:'=9 A:8 58:' ><:C8 7@ ' 68 ' 57F8$;8 F8 8>>8C5 ' J<E6B ; ?8 =88@ G:<BEC8B 7>'5;8 F8 F<E@5 <>' =: B7@A G<J8:' ; B =88@ 8L8:58B <?8:' @ 8HE 6 :8 ' <>' 7F76 :' :<CI'7@' 5;8 6G $ E5 75 7 ' B<E=5>E60 G8:; G 0 7>'5;8:8 7 ' 7@' 5;8 6G ' @ 8HE 6 :8 ' <>' :<CI' J ;7C;' C @ =8 C<FG :8B ><:' G8:>8C57<@ <>' A6 C7 57<@ 5< 5; 5 <>' J ;7C;' ' ; ?8 G<I8@$ ' 5;7@I 75 F 9 C8:5 7@69 =8 8:58B 5; 5 5;8:8 7 ' @<5 875;8:' 7@' 5;8 (6689 <>' 5;8 ;<@8 <:' 7@' 5;8 (6689 <>' < 5 $;8 A6 C78: 8:<B8B :<CI ' <>' 5;< 8 ? 6689 0 @B <>'5;8 6G ' A8@8: 669 0 :8 @<5 =68 ><:' 5;87:' C<@

?8L759 @B 5;7 >><:B 8?7B8@C8 5; 5 5;8 6G ; ?8 =88@ E=!8C58B 5< 68 =: B7@A G<J8:5; @ 5;8 B7 5:7C5 7@ &:88@6 @B 5< 5;8 8 5<> 6 E ; ?@$; <J 7> 5;8:8 7 @9 5:E5;7@ 5;8 EFG57<@ 5; 5 A6 C78: B7A J 9 7@5< <>5 :<CI J75;FEC;A:8 58:: G7B759 5; @7@5< ; :B <@8 5;8:8 7 <> C<E: 8 A:8 58: <GG<:5E@759 ><: 5;8 8L8:C7 8 <>5;7 B7 C:7F7@ 57?8 8LC ? 57<@ J;8@ A:8 5 G<J8: 7 8L8:58B @B J;8@ A:8 5 8:< 7<@ <CCE: 5; @ J;8@ 68 G<J8: 7 8L8:C7 8B @B 68 F 558: 7 :8F<?8B$ @ &:88@6 @B 65;<EA; 8@<:F<E G<J8: ; =88@ 8L8:58B @B C<@ 7B8: =68 B8G5;<> :<CI ; =88@ E@D B<E=58B69 :8F<?8B J8 >7@B @< GG:8C7 =68 B7 57@C57<@ F B8 7@5;8 5:8 5F8@5 <> 5J< F 58:7 6 <> ?8:9 B7>>8:8@5 B8A:88 <> ; :B@8 $ <J 5;8@ 7 75 G< 7=68 5< EGG< 8 5; 5 5;8 G:<B7A7<E F<E@5 <> B7 57@C57<@ C<E6B ; ?8 =88@ F B8 J;7C;7 EF8B =9 :<>8 <: F 9 7@5;8 68 8:<B8B 6G ^

;8 8 :8 =9 @< F8 @ 5;8 <@69 <= 5 C68 J;7C; 5 @B 7@5;8 J 9 <> CC8G5 @C8 <> ;7 5;8<:9$P ;8 B7>>7CE659 7 A:8 5 <> 8LD G6 7@7@A ;<J 5;8 A6 C78: 8LC ? 58B 5;8 :<CI = 7@ J;7C;8L7 5 =E5 75 7 5766 F<:8 5:<E=68 <F8 5< CC<E@5 ><: 5;8 @<@ 8L7 58@C8 <> 5;< 8 J;7C;<EA;5 5< ; ?8 =88@ F B8$;8 :<>8 <:8LG6 7@8B 5 C<@ 7B8: =68 68@A5; J;9 5;89 J<E6B @<5 =8 ><:F8B EG<@ 588G A:<E@B Md 8 G$ N @B C<:B7 669 A:88 J75;5;8 >7: 5G :5 <> ;7 :8F :I 8=E5;8 J8@5 <@5< 9 5; 5 J;8@ A6 C78:B8 C8@B8B 7@5< Z>6 5? 6689 5;8C 8 J B7>>8:8@5$;8:8 5< E 8 ;<F869 G;: 8 5;8 7C8 ; B 57F8 5< 868C5 <>5 G6 C8 ><:8LC ? 57<@$3 Z) ;9 5;8@03 I8B 8?8: 8F7@8@5 G8: <@ K :$.<;@ 66 @B :<>8 <: ?:8 F<@A 5 5;8@EF=8: K Z :8 5;8:8 @<5 6 I8 7@5;8 (6689 <> < 5 ^3 ;8 ? 6689 7 G:8C7 869 5;8 I7@B <> <@8 7@ J;7C;5;89 ;<E6B ; ?8 =88@ ><: F8B$ 5 7@C67@ 57<@ ; ?8 ;<J@ MG$ N 7 ?8:9 F<B8: 58 @B 8?8: G :5 <> 75 M5;8 758 <> 5;8 C759 <> < 5 ><: 8L FG68N :8 6F< 5 G6 7@ $;8 A6 C78: J;7C;<CCEG78B 75 <@8 J<E6B ; ?8 5;<EA;5 J 5;7CI 8@<EA;5< ; ?8 A:<E@B <E5= 7@ 7@

P 4<: <F8 <> 5;8 F<:8 7FG<:5 @5 <=!8C57<@ 88 7: $ E:C;7 <@R BB:8 5< 5;8 <9 6 &8<A$ <C$ 2 7: $ 9866R o2 & @B & C :<>$ 5EB8:R 3 (!2 C :<> 4 ?:8 7@ $:C; 0 @B :$.<;@ 66 7@ $ 48=$ $

2Q ! "(!' ! ' 4 ' (! 6# 7 / *

@ < J 0 ><:' 5 ; 8' A : 8 5' A6 C78 : ' 5 ; 5' >7668B' 5 ; 8' 6 :A8 :' ? 6689 ' 7 E8B' <E5' EG<@' @B' <?8 :>6< J 8B' 5 ; 8 8' 6< J 697@A' :7?8 : A : ?86 0' @B' B8G< 758B' 5 ; 87 :' F <: 7@8 ' $ ' 5 ; 8 F 0' <@69' 7@' G :5' C<<G7@A' 5 ; 8 F ' J 90' GG :8@569' =8C E 8' 5 ; 8' A6 C78 : ' B7B' @<5' 8@BE :8' 6<@A' 8@<EA ;' <>' E>77C78@5' 7S8' 5<' C< F G6858' 5 ; 87 :' B8 5 :EC57<@$' %<' =8558 :' G : <<>' C<E6B' =8' :8HE7 :8Bc5 ; 5' 7@' A :8 5' G :5' 5 ; 8' ? 6689 ' <>' 5 ; 8' 6G ' J 8 :8' GG :<L7F 5869' ' B88G' =8><:8' 5 ; 8' A6 C7 6' 8G<C ;' ' 5 ; 89' :8' 5' G :8 8@50 @B' ' =8678?80' J 75 ;' 5 ; 8' 5 67 @' A8<6<A7 5 0' 5 ; 5' 66' 5 ; 5' 5 ; 8' A6 C78 : ' ' ' J ; <68' 8>>8C58B' J ' <@69' 67A ; 569' 5<' B88G8@' 5 ; 8 8' ? 6689 $3K $ ' ' ' % <?$' Q0' G$ 1 $

;7 ' G A8' J 0' ' G :8 E F 80' 7@58@B8B' 5<' EG 85' 5 ; 8' B<C5 :7@8 ' <>' ' :$' 9@B 660' @B' 75' B7B' <0' C<@C6E 7?8690' ' > :' ' 5 ; 8' F <E5 ;' <>' 5 ; 8' (6689' <>' < 5 ' J ' C<@C8 :@8B$ 5' 5 :EC I ' 6F < 5' ' 8?8 :869' 5'5 ; 8' <G7@7<@ ' <>' 75 ' E5 ; <:$ @B88B0' 5 ; 8 :8' 7 ' C :C869' @95 ; 7@A' F<:8' B F A7@A' 5<' =8' ><E@B' 7@' 5 ; 8' J ; <68' <>' 5 ; 8' :8 F :I ' J ; 7C ;' 5 ; 8' GE=67D C 57<@' <>' ; 7 ' <:7A7@ 6' F 8 F <7 :' C 668B' ><:5 ;$ 5' 5 ; 8' F <E5 ;' <>' 5 ; 8' (6689' <>' < 5 0' BE :7@A' 5 ; 8' A6 C7 6' 8G<C ;0' 5 ; 8' J ; <68' <>' 5 ; 8' C<@B7D 57<@ ' J 8 :8' ><E@B' J ; 7C ;' :<>8 <:' F 9' :8HE7 :8 ' ><:'5 ; 8' ><: F 57<@' <>' 6 I 8 = 7@ $;8 :8' J ' ' ' ' ' 5 ; 5' 7 E8B' <E5' EG<@' ' G6 7@0' @B' J ; 7C67 0' 7@' C<@ 8HE8@C8' <>' ' J <: I 8B' J 75 ;' E@D E E 6' 8>>8C5' M'N$ 5' 7 ' B8 F <@ 5 : =68' 5 ; 5' 75' 8L7 58B' EG<@' 5 ; 8' G6 7@' ><:' @' 2 ' ' $' &' C' 75' 7 ' C8 :5 7@' 5 ; 5' 75' J ' 6 V ' $ 'C' @B' 5 ; 8' 2 ' 'EG<@' J ; 7C ;' 75' J <: I 8B' J ' E@B<E=58B69'& 2 3 '& ' 6 ' 85' 5 ; 8' :<>8 <:' 7 ' <=67A8B' 5<' C<@>8 ' 5 ; 5' 5 ; 8' 7C8' J ' E@ =68' 5<' :8 F <?8' 6<< 8' :7?8 : A : ?86' 697@A' EG<@' 5 ; 8' E:> C8' M7@B88B0' 5 ; 5' 5 ; 8' A6 C78 :' C5E 669' 68>5' @<5 ; 8 :' 5 : 5E F' <>' B :7>5' EG<@' 5 ; 8' A : ?86N0' @B' 5 ; 5' 5 ; 8' <67B' :<C I ' =8@8 5 ;' B7B' @<5' 8LG8 :78@C8' @9' 8LC ? 57<@' J ; 58?8 : ' ;8 :8' :8' F @9' <5 ; 8 :' G6 C8 ' 5' J ; 7C ;' 5 ; 8' F8' 5 ; 7@A' 7 ' I @< J @' 5<' ; ?8' <CCE : :8B0' @B' <' > :' >:<F' 5 ; 8 :8' =87@A' @9' 8 G8C7 6' 58@B8@C9' 5<' 8LC ? 58' 5<D J :B ' 5 ; 8' @<E5 ' <>' A6 C78 : 0' J 866 8 5 = ; ;8B' > C5 '68 B' : 5 ; 8 :' 5<' 5 ; 8' <GG< 758' C<@C6E 7<@$' ' A6 C78 :' J ; 7C ;' 7 ' =8 :7@A' F <: 7@8 ' 6J 9 ' ; ' 5 ; < 8' F <: 7@8 ' = :<EA ;' 5' 5<A85 ; 8 :0' !E F =68B' 5<A85 ; 8 :0' 5< J :B ' 75 ' @<E5$' EC ;' <>' 5 ; 7 ' F <: 7@8 F 558 :' > 66 ' B< J @' 5 ; 8' 7B8 ' <>' 5 ; 8' A6 C78 :0' @B' A85 ' J 8BA8B' =85 J 88@' 5 ; 8' 7C8' @B' 5 ; 8' =8B :<C I ' 0' F EC ;' F <:8' > 66 ' <?8 :' 5 ; 8' 58 : F 7@ 6' > C8' <>' 7C80' @B' ><: F ' ' 5 : 5E F' <?8 :' J ; 7C ;' 5 ; 8' A6 C78 :' ; ' 5<' G $;7 ' C<@57@E 669' ; GG8@ ' ' 5 ; 8

A6 C78: G:<A:8 8 @ E@576 5;7 5: 5EF 7@58:G< 8B =9 5;8 A6 C78: 75 86> 7 A:<E@B J 9 5;8 =8B :<CI M<: J; 58?8: F 9 ; GG8@ 5< ;8 <?8: 5;8 =8B :<CI M 7 @<5 768B$;8 8?7B8@C8 7 5; 5 5;8 5: 5EF <> A6 C7 6 B:7>5 J;7C;' J B8G< 758B 7@ 5;7 J 9 5 5;8 F<E5;' <> 5;8 (6689 <> < 5 J =68 5< :8 7 5 5;8 A:7@B7@A <> 5;8 A6 C78: BE:7@A 5;8 J;<68 <> 75 G:<6<@A8B <G8: 57<@ :<E@B ?:8 @B 5;7 > C5 A7?8 G8:; G C68 :8: 7B8 <> 5;8 8L5:8F 869 67F 758B G<J8: <> A6 C78: >: 8LC ? 57<@ 5; @ @9 <5;8: J;7C;' C @ ;8 =:<EA;5 ><:J :B$

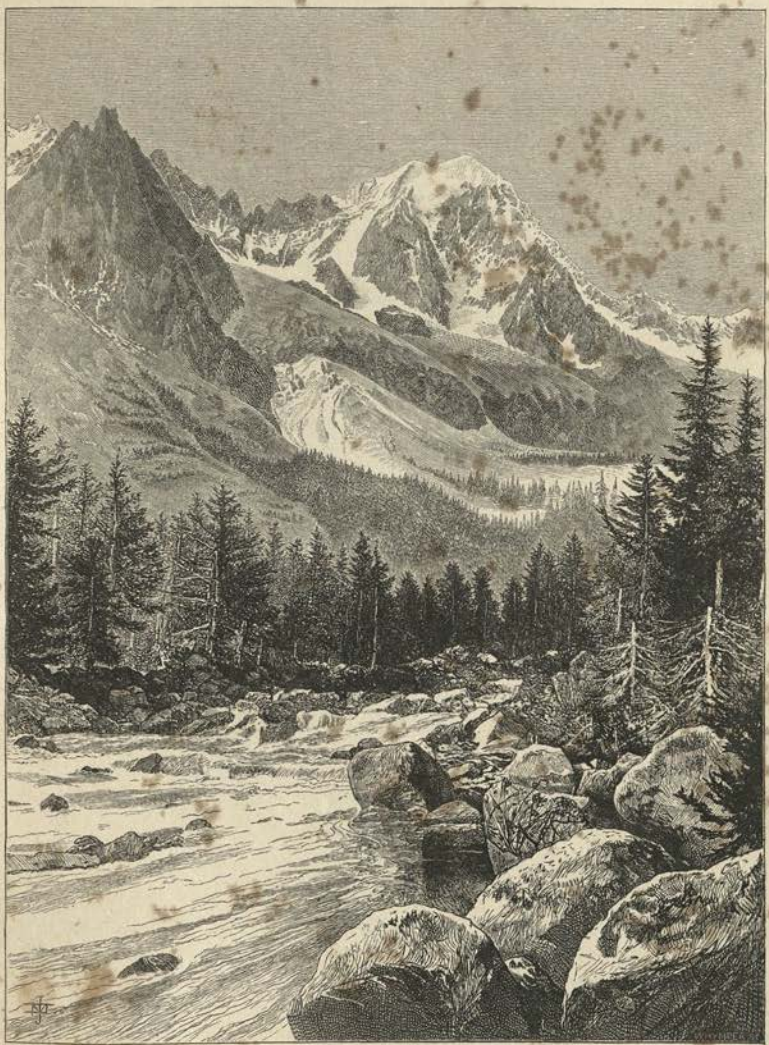
;8 J87A;5 <> 8?7B8@C8 88F 5< F8 5< =8 :;8 ?B9 A 7@ 5 :<>8 <: F 9R 5;8<:9$ @ EGG<:5 <> 750 ;8 ; 6758: 669 @<5677@A F<:8 5; @ 5;8 > C5 5; 5 A6 C78: =: B8 :<CI <?8: J;7C;' 5;89 G @B 5; 5 5;8:8 :8 @EF8:<E :<CI = 7@ M<CCEG78B <: @<5 <CCEG78B =9 6 I8 M 697@A J75;7@ :8 J;7C;' J8:8 ><:F8:69 C<?8:8B =9 A6 C78:$ 8:8 C8:5 7@59 8@B $;8:8 :8 @<5;7@A =E5 C<@!8C5E:8 68>50 F< 5 <> J;7C;' ; ?8 @<5 8?8@ G:<= =76759 <@ 5;87:' 7B8$;8 7B8 5; 5 66 G8559 G<<6 @B F 66 5 :@ MJ;7C;' 678 7@ :<CI = 7@ M <CCEG9 :8 J;7C;' ; ?8 =88@ E=!8C58B 5< G8C7 6 A:7@B7@A 88F 5< F8 5< =8 >E669 = E:B 5;8 @<57<@ 5; 5 8 C;' <@8 678 7@ @ :8 <> G8C7 6 E= 7B8@C8 @B 7> 66 5;8 A8<6<A7 5 7@ 5;8 J<:6B J8:8 5< J8 :5; 5 75 J <68F@ ?8:759 C<E6B @<5 =8678?8 750 >58:J;5 ; ?8 88@ <> 5;8 =8; ?7<E:<> A6 C78: EG<@ :<CI $;8 @<57<@ 5; 5 5;8 A:8 5 6 I8 = 7@ <CCEG9 :8 5; 5 J8:8 >7668B J75;' 8 G8C7 669 <>5 5: 5 J;7C;' J8:8 E=!8C58B 5< 8LC8G57<@ 6 A:7@B7@A 88F 5< F8 @<5 5< =8 J :: @58B$ 5 7 B<E=5>E6 7> 5;8 <>5 5: 5 ; B @9 8L7 58@C8 75 7 B<E=5>E6 7> 5;8:8 J 8LC8G57<@ 6 A:7@B7@A @B 75 7 ;7A;69 7F G:<= =68 5; 5 5;8 A6 C78: J<E6B ; ?8 J<:I8B EG<@ 5;< 8 = 7@ 5 : 58 58@ >7>59 <:' ;E@B:8B 57F 8 > 58:5; @ 5;89 B7B 7@ <5;8:G6 C8 8?8@ 7> 5;8 = 7@ J8:8 >7668B J75;' <>5 5: 5 $ <:8 8?7B8@C8 7 J @58B EG<@ 5;7 ;8 B =E5 75 J766 =8 E:G:7 7@A 7> >:8 ;' > C5 EG 85 5;< 8 J;7C;' ; ?8 =88@ 6:8 B9 <= 8:?8B$ <<I7@A 5 66 5;7 B<E=5 @B C<@D !8C5E:8 <@ <@8 7B8 @B 5;8 @EF8:<E > C5 EG<@ 5;8 <5;8:' J;7C;' G:<?8 5; 5 ?8:9 F 66 A6 C78: 8:< 7<@ ; <CCE::8B 5;:<EA;<E5 5;8 6G A8@8: 669 @B 5;8 8L5:8F 869 67F 758B C G C759 <> A6 C78: ><:

8LC ? 57<@' E@B8:' @9' C7:CE@7 5 @C8 0' 75' 88F ' 68 ' G:<= =68' 5; 5' :<>8 <:' F 9R' 5; 8<:9' J766' J<:I' 75 ' J 9' 5<' G<GE6 :' CC8G5 @C80' 5; @' 5; 5' 75' J766' HE78569' 5 I8' 75 ' G6 C8' F<@A 5' 5; 8' 8LG6<B8B' B<AF ' J ;7C;' :8' 68>5' =8;7@B' 7@' 5; 8' G:<A:8 ' <>' C78@57>7C' 7@HE7:9$

E:' 5;<EA;5 ' J8:8' F<:8' 5; @' E E 669' 85 ' EG<@' ' 2 =' ' @B' :<CI ' <>' 5; 5' ' 2 ' EG<@' 5;8' Q B' <>' .E@8' $ 9' AE7B8 ' @B' ' J8:8' :8G< 7@A' EG<@' 5;8' 5<G' <>' <@5' L80' C @@7@A' 5;8' &: @B8 ' .<: 8 0' J75;' ' ?78J' 5<' C8@B7@A' 75$ 47?8' 5;<E @B' >885' <>' A6 C78: C<?8:8B' G:8C7G7C8 ' :< 8' =<?8' E 0' @B' EG' 66' 5; 5' ;87A;5' J8' 5: CI8B' ' J 9' 5<' <E:' 57 > C57<@$;:88' 5;<E @B' >885' F<:8' <>' A6 C78:' @B' ><:8 5 C<?8:8B' 6<G8 ' 6 9' =8@8 5;0' @B' $ ' 5;8:8' J ' <@69' <@8' G<7@5' 5' J ;7C;' 75' J ' B<E=5>E6' 7>' J8' ;<E6B' >7@B' ' G 5;$;8' A6 C78: ' J8:8' ;:7@I7@A0' @B' J8:8' E::<E@B8B' =9' = D 57<@ ' <>' :<E@B8B' :<CI0' > :' 5<<' G<67 ;8B' 5<' G68 8' 5;8' :<EA;' F<E@D 5 7@88:$) 8' C<E6B' @<5' 5: CI' ' J 9' C:< ' 5;8F$ <J8?8:0' 5' 2' $ $ 5;8' @8L5' B 90P' E@B8:' 5;8' B8L58:<E ' 68 B7@A' <>' 7C;86' :<S0' J8' G 8B' 5;8' B<E=5>E6' G<5$;8@C8' 75' J ' 66' G6 7@' 767@A0' @B' 5' ' $ $ J8' A 7@8B' 5;8' EF F75$;8' J8 5;8:' J ' =<7 58:<E '7@' 5;8' EGG8:' :8A7<@ 0' @B' 5<: F C6<EB ' B:7?8@' =8><:8' 5;8' J7@B0' @B' J:8CI8B' A 7@ 5' <E:' ;87A;5 0' 8@?86<G8B' E ' 7@' F7 59' G: 90' J;7C;' B @C8B' :<E@B' @B' >68B' J 90' J;7C;' CE5' E ' <>>' >:<F' 5;8' F 58:7 6' E@7?8: 80' @B' C E 8B' E ' 5<' =80' ' 75' J8:80' E G8@B8B' =85J7L5' ;8 ?8@' @B' 8 :5;0' 887@A' =<5;' <CC 7<@ 6690' =E5' 88F7@A' 5<' =86<@A' 5<' @875;8:$;8' F7 5 ' 6 58B' 6<@A8:' 5; @' F9' G 578@C80' @B' J8' B8 C8@B8B' J75;<E5' ; ?7@A' 55 7@8B' 5;8' <=!8C5' ><:' J;7C;' 5;8' C8@5' J ' F B8$ 5' >7: 5' J8' ><66<J8B' 5;8' 675568' :7BA8' ;<J@' EG<@' 5;8' CC<FG @97@A' 8@A: ?7@A0' 68 B7@A' >:<F' <E:' EF F75'YP 5<J :B ' 5;8' G8C5 5<:0' @B

P' 4<:' :<E580' 88' F G' <>' 5;8' C; 7@' <>' <@5' 6 E8$

5' .:8 C8@5' <>' 5;8' &: @B8 ' .<: 8 ' J ' F B8' 5<' <=5 7@' ' ?78J' <>' 5;8' EGG8:' G :5' <>' 5;8' 7A$ (8:580' @B' EG<@' 5>7 5' CC<E@5' 5;8' J8 58:@F< 5' EF F75' J 0' 868C58B' 7@' G:8>8:8@C8' 5<' 5;8' ;7A;8 5' <@8$ <5;' EF F75' ' :8' ;<J@' EG<@' 5;8' CC<FG @97@A' 8@D A: ?7@A$; 5' <@' 5;8' :7A;5' 7' M ' 75' GG8 : ' 5<' =80' 5;8' ;7A;8 5$; 5' EG<@' 75' ' 68>5' 7' 5;8' <@8' J;7C;' J8' C8@B8B0' @B' 7' =<E5' '>885' 6<J8:' 5; @' 5;8' <5;8:$ ' C<EG68' <>' B 9' >58:' <E:' C8@50' 8@:7' &: 570' .E678@' &: @A80' .< $:$ 8::<B0' 68L7' 6E S0' @B' ' @786' &8L' M 66' <>' <F F 98E:N0' ><66<J8B' <E:' 5: C8' 5<' 5>78' EF F75' 7@' <:B8:' 5<



THE GRANDES JORASSES AND THE DOIRE TORRENT, VAL FERRET (D'ITALIE).

5;8@' 5<<I' 5<' 5;8' ;8 B' <>'5;8' C<::7B<:' <>'A6 C78:' <@' 75 ' 68>50' J;7C;' 7@' 5;8' ?78J'7 ' 68>5' G8:>8C569' J;758$' ;8' 6<G8 ' J8:8' 588G' @B' C<?8:8B' J75;' @8#? > 668@' @<J0' >6<E: 67I8' @B' 8?76' 5<' 5:8 B' EG<@$' @' 5;8' C8@5' J8' ; B' :8?768B' 750' @B' ; B' F B8' <E:' 5 7:C 8' J75;' FEC;' C E57<@0' I@<J7@A' >E66' J866' 5; 5' 5;8' B7 5E:= @C8' <>'75 ' = 8' J<E6B' =:7@A' B<J@' 66' 5; 5' J ' =<?8$' @' B8 C8@B7@A0' 5;8' =<6B8:' G7:75 ' C<E@ 8668B' 5:E 57@A' 5<' 6EC I' @B' ' A67 B80' 5;8' C E57<E ' <@8 ' B?<D C 58B' ?<7B7@A' 5;8' 6<G8 ' @B' C:< 7@A' 5<' 5;8' :<CI ' <@' 5;87:' > :5;8:' 7B8$' ;8' B?7C8' <>'5;8'6 558:' G:8? 768B0' @B' J8' ; B' ; 5: ?8: 8B' 5;8' @<J0' 5<' A 7@' 5;8' :7BA80' J;8@' 5;8' C:E 5' 67GG8B' @B' J8' J8@5' 6<@A' J75;' 75$' Z 65 3' =:<I8' >:<F' 66' ><E:0' E@ @7F<E 69$' ;8' L8 ;8 B ' >68J' :<E@B' ' J8' 5 :58B' <@' 5;7 ' 7@?<6E@5 :9' A67 B8$' 5' J 'E 868 0' 5;89' 67B' <?8:'5;8' E@B8:697@A'7C8' >:E756B 69$' Z' 65'3' 5;E@B8:8B' :<S0' ' ;8' B ;8B';7 ' J8 G<@' 7@' A 7@' J75;' EG8:;EF @' 8@8:A9$' <' ; 65' C<E6B' =8' F B80' @B' J8' 67B' B<J@' 6<J690' =E5' J75;' CC868: 57@A' F<57<@0' B:7?7@A' EG' J ?8 ' <>' @<J' 7@' >:<@50' J75;' 5:8 F ' <>'5;8' @ 59' 5E>>' ;7 7@A' 66' :<E@B$' EC I7690' 5;8' 6<G8' 8 8B' <>' 5' <@8' G6 C80' 5;8' 68 B7@A' F8@' C68?8:69' !E FG8B' 7B8' <E5' <>' 5;8' F<?7@A' @<J0' J8' <5;8: ' ><66<J8B0' @B' 5;8' 9<E@A' ? 6 @C;8' J;7C;' J8' ; B' 5 :58B0' C<@57@E7@A' 5<' G<E:' B<J@0' >866' 7@5<' ' 9 J@7@A' C:8? 80' @B' ;<J8B' E ' J;8:8' <E:' A: ?8'' J<E6B' ; ?8' =88@' 7>' J8' ; B' :8F 7@8B' 7@' 75 ' C<FG @9' >7?8' 8C<@B ' 6<@A8:$' ;8' J;<68' >> 7:' B7B' @<5' <CCEG9' ; 6> F7@E58$' 5' J ' 5;8' <675 :9' 7@C7B8@5' <>' ' 6<@A' B 90' @B' 5' @7A;5> 66' J8' :8 8@58:8B' 5;8' 8LC8668@5' ;<E 8' I8G5' =9' 5;8' C<E:58<E ' 8:5<67@70' J866' 57 >78B' 5; 5' J8' ; B' @<5' F85' J75;' F<:8' 7@C7B8@5 ' <>' ' 7F76 :' B8 C:7G57<@$

68 :@' 5;8' J 9$' ' > :' ' F9' <= 8:? 57<@' 8L58@B 0' EC;05;7@A ' :8' 86B<F' B<@8' =9' F<@89 A: G7@A' <:' G7:7568 ' AE7B8 0' @B' ' ; ?8' FEC;' G68 E:8'7@' =87@A' =68'5<' F8@D 57<@'5;87:'@ F8 $' ;8';7A;8 5'G<7@5'M 01 N' J ' C8@B8B' <@'.E@8'Q 0' 6 0' =9' :0 <: C8') 6I8:0' J75;'5;8'AE7B8 ' 86C;7<:' @B8:8AA0'.$. E@0' @B'.E678@'&: @A8$

& & +' F<E@5 7@88:' ; ?8'=88@'6 558:69'7@'5;8' ; =75'<>'A<7@A' EG'<@8' 7B8'<>' @' 6G' @B'C<F7@A'B<J@'5;8'<5;8:0 @B' C 7@A'5;8' :<E58' 'G $ @'5;7 'C<@>E 7<@'<>'7B8 ' F 9'=8':8C<A@7 8B'5;8':8D E65'<>'5;8'6<< 8@8 '<>'5;<EA;5' J ;7C;' :7 8 '>:<F'5;8' = 8@C8'<>' 58C;@7C 6' 8BEC 57<@$;8'5:E8'=8678?8:' =;<: ' EC;' ;8:8 78 0' @B' <= 8:?8 ' J75;' 57 > C57<@'5; 5' :<?7B8@C8'<>58@57F8 ' GE@7 ;8 '5;8' <>>8@B8:' ><:'5;87:' A:88B7@8 '=9'C E 7@A'5;8F'5<' =8'=8@7A;58B$;8' > 75;>E6' I@<J'5; 5' G 8 ' FE 5'=8' F B8'=85J88@' F<E@5 7@ 0' @B'@<5' <?8:'5;87:'5<G $;87:' C:88B' B8C6 :8 ' 5; 5' =85J88@' @9' 5J<' F<E@5 7@ '5;8:8' 2 '=8' 'G 0' @B'5;89'=8678?8'5; 5'5;8'8@B' ><:' J ;7C;'=7A'G8 I ')8:8'C:8 58B K+5;8 <>>7C8'5;89' :8'8 G8C7 669'B8D 7A@8B'5<' >E6>76K 7 ' 5<' G<7@5' <E5$5;8' JF9' <@8' ;<E6B' A<$;7 ' 7 '5;8'5:E8' > 75;0' @B'5;8:8'7 '@<'<5;8:$

) 8' 85'<E5'EG<@'5;8'Q 5;'<>'.E@8'5<'8@B8 ?<E:'5<' BB'<@8'F<:8' 5<'5;8'G 8 ' J ;7C;' :8' 5:7C569'<:5;<B<L$) 8' ;<G8B0' : 5;8:'5; @' 8LG8C58B0' 5<' B7 C<?8:' ' HE7CI8:' :<E58' >:<F' <E:F 98E:'5<' ; ' F<E@7L'5; @'5;8' <6' BE' &8 @50' J ;7C;'J ' 5;8'8 78 50' HE7CI8 50' @B' F< 5'B7:8C5'G ' I@<J@' 5'5;8'57F8' C:< '5;8'F 7@'C; 7@'<>' <@5' 6 @C$P' ;8'F7 A7?7@A ' J ;7C;' ' ; B' '5<'5;8':8 E65'C E 8B'E '5<' 5 :5' 5'5;8' E@E E 6' ;<E:'<>' Q$2 ' ' 5'2$ ' DE' G 8B'5;8' C; 685 '<>' :+'BE' :0' @B'5;8@C80'><:' <F8'B7 5 @C80'><66<J8B'5;8' 5: CI'J ;7C;'J8' ; B'F B8'EG<@'5;8' C8@5'<>' <@5' '<68@50'<?8:'5;8

P' ;8'?78J'<>' <@5 6 @C'>:<F' 'A<:A8'<@'5;8'$ <E5;'<>'5;8' 5 67 @'(6' 48::850' F7B J 9'=85J88@'5;8'?766 A8 '<>' '(C;89' @B' : S' 8C0' @B' =<E5' '>885' =<?8' 5;8F0'7 0'7@' F9'<G7@7<@0'5;8'>7@8 5'J ;7C;'C @' ;8"<=5 7@8B'<>'5; 5'F<E@5 7@': @A8' @9D J ;8:8'EG<@'5;8' 5 67 @' 7B8$

THE SUMMIT OF THE COL DOLENT.

A6 C78:' <> 5 ; 8' F8' @ F8' MG$ Q N$ 5' ' HE :58:' G 5' ' J8' :D :7?8B' 5' 5 ; 8' ; 8 B' <> 5 ; 8' A6 C78:0 @B' 5' 5 ; 8' ><<5' <> 5 ; 8' <@69' 588G' A: B78@5' EG<@' 5 ; 8' J ; <68' <> 5 ; 8' C8@5$

* 5' J ' 5 ; 8' =8 E 7B8 6' <>' 'G $; 8:8' J ' ' A G' 7@' 5 ; 8' F<E@D 5 7@ 0' J75 ;' ' =7A' G8 I' <@' 8 C ;' 7B8' M <@5' ' <68@5' @B' 5 ; 8' 7A$ B8' :7<685N$0 ' @ : : <J' 5 ; : 8 B' <>' @<J' 68B' EG' 5<' 5 ; 8' 6<J8 5' G<7@5' =85J88@' 5 ; < 8' F<E@5 7@ 0' @B' 5 ; 8' =6E8' I9' =89<@B' 7B$ ' 7 : 8C569' 9<E' : : 7?8' ; 8 : 8' 9<E' J766' =8A7@' 5<' A<' B<J@$) 8' BB : 8 8B' <E : 86?8 ' 5<' <E:' 5 I0' @B' 5' $ ' $ 2 ' : : 7?8B' 5' 5 ; 8' 5<G' <> 5 ; 8' G $

B' 5 ; 7@A ' A<@8' ' 5 ; 89' <EA ; 50' J75 ; 7@' 7L' ; <E: ' F<: 8' ; <E6B' ; ?8' =88@' 5' ; F<E@7L$ / G<@' 5 ; 8' <5 ; 8 : ' 7B8' J8' I @8J' 5 ; 5' 5 ; 8 : 8' J ' ' C<E6<7 : ' 7@' C<: : 8 G<@B8@C8' J75 ; ' 5 ; 5' EG' J ; 7C ; ' J8' ; B' !E 5' C<F8$ > 75 ' ; B' =88@' >7668B' J75 ; ' @<J' 66' J<E6B' ; ?8' =88@' J866$ 5' 5E : @8B' <E5' 5<' =8' >7668B' J75 ; ' 7C8$: <S0' J ; <' 68B0' G 8B' <?8 : ' 5< 5 ; 8' <5 ; 8 : ' 7B80' @B' : 8G<: 58B' 5 ; 5' J8' ; <E6B' A85' B<J@' <F8 ; <J0' =E5' ' I @8J' > : <F' 5 ; 8' <E@B' <>' ; 7 ' L8' ; <J' 5 ; 8' <F8 ; <J' J<E6B' =80' @B' 85568B' F 9 86>' 5<' I85C ; 0' J866' E : 8B' 5 ; 5') ' ; <E6B0' F<5' =8' J @58B' ><:' @' ; <E:' 5<' C<F8$) ; 5' ' J' 7 ' ; <J@' 7@' 5 ; 8' 8@A : ?7@A$ ' ; : G' 7AE7668' M@ F868 N0' G8 : ; G ' 5 ; 8' ; : G8 5' 7@' 5 ; 8' J ; <68' : @A80' = CI8B' <@' 5 ; 8' 68>5' =9' 5 ; 8' 7A$0B8' : 7<6850 HE88 : ' =6<CI ' <> MG : <= =69N' G : <5<A7@8' 57CI7@A' <E5' J I J : B69' 5 ; : <EA ; ' 5 ; 8' @<J0 @B' ' ; EA8' C<: @7C8' > : <F' J ; 7C ; ' =7A' 7C7C68 ' B8G8@B8B0' 5 ; 5' =: <I8$ ' J 9' <CC D 7<@ 669' @B' J8@5' I7BB67@A' B<J@' 5 ; 8' 6<G8' EG' J ; 7C ; ' J8' ; B' C<F8$ > 5 ; 8' : A8@578 : 8' 7B8' ' C<E6B' @<5' 88' @95 ; 7@A$

: <S' J ' 578B' EG' J75 ; ' <E:' A<<B' @766 ' : <G80' @B' 5 ; 8' J ; <68' Q ' >885' J8 : 8' G 98B' <E5' A : BE 669' =9' 7F8 : ' : 7B' 78@8 : ' =8><: 8' ; 8' C8 8B' J<: 6B@A$ >58 : ' 5J<' ; <E: R 7@C8 @5' 5<760' ; 8' J ' =68' 5<' @C ; <: ' ; 7F 86>' 5<' 5 ; 8' : <CI' <@' ; 7 ' : 7A ; 5$ 8' 5 ; 8@' E@578B' : 7F 86>0' 5 ; 8' : <G8' J ' B : J@' 7@0' 78@8 : ' J ' 55 C ; 8B' 5<' 5 ; 8' 8@B' @B' J8@5' B<J@' 5<' !<7@' ; 7 ' C<F : B8$; 8 : 8' J ' 5 ; 8@' : <<F' 8@<EA ; '><: ' F8' 5<' 5 @B=9' 5 ; 8' 7B8' <>' 7F8 : 0' @B' ' A<5' F9' >7 : 5' ?78J' <> 5 ; 8' <5 ; 8 : ' 7B8$ 4<: ' 5 ; 8' >7 : 5' @B' <@69' 57F8' 7@' F9' 67>8' ' 6<<I8B' B<J@' ' 6<G8' F<: 8' 5 ; @' ' 5 ; <E @B' >885' 6<@A0' 85' 5' @' @A68' <>' =<E5' `0' J ; 7C ; ' J ' ' ; 885' <>7C8' > : <F' 5<G' 5<' =<55<F$ 5' J ' E@=: <I8@' =9' : <CI' <: ' C : A0' @B

@95;7@A5;:<J@B<J@75 G8B J 9E@ ::8 58BE@576 5;8 68?86 <>5;8 &6 C78:BR :A8@57+:8J :8 C;8B$;8 8@57:8= 7@<>5;5 5@<=68A6 C78:P) G:8 B <E5 5 <E:>8850 @B 5;8 :7BA8 =89<@B0 CE6F7D@ 57@A7@5;8 7A$ BR :A8@578:80 J 88@5<5;8 A:8 58 5 B? @5 A8$ C<@>8 0 ;<J8?8:05; 5 G 7B?8:9;5568 558@57<@5<5;8 ?78J0><:5;8:8 J @< 57F8 5< 7@BE6A8 7@ EC;6ELE:78 $ B8 C8@B8B 5;8 7C9 5 7:C 8 @B!<7@8B5;8 <5;8: 0 @B5;8@ J8 5;:88 B:8J7@5;8 :<G8 58@B8:69 7F8:C F8 B<J@$ 7 J @<5 @ 8@?7 =68G< 7D57<@0 =E5;8 B8 C8@B8B J75; F EC;58 B7@8 7>;7 J;<68 ;>8; B =88@ G 8B <@ 7C8 6<G8 <> `$;8 G:<C8 J :8G8 58B0 5<S A 7@A<7@A5<5;8 >:<@50 @B ? 767@A;7F 86>?8:9 I76>E669<>5;8 :<CI J;7C;G5<!8C58B>:<F5;8 C677><@<E:7A;5$ E:Q >885<>:<G8 A 7@C F8 5< @ 8@B0 @B J8 A 7@B8 C8@B8B <@8 =9<@8$4:<F5;7 G<7@5 J8 J8:8 =68 5< C6 F=8:B<J@=9 5;8 :<CI 6<@8><: =<E5 >885$;89 5;8@=8C F8 ;88:C67>>0 @B J8 5<GG8B><:B7@8:0 =<E5Q$ 1 2 (5 5;8 6 5 G6 C8 EG<@ J;7C; J8 C<E6B75$ 4<E:;<E: R7@C8 @5 J<:I; B=:<EA;5E : 5;8: F<:8 5; @; 6> J 9 B<J@5;8 AE669$) 8 J8:8@<J GG:< C;7@A0 65;<EA;J8 J8:8 5766;7A; =<?80 5;8 C;:E@B 5 75 = 80 @B5;8 AE7B8 F B8<E50 7@ <F8 J 9E@I@<J@5<F80 5;5% 5E:8; B G8:?8: 869 G6 C8B5;8 <@69 @<J =:7BA8 C:< 5;8 5<GF< 5 <@8 5<J :B 5;8 C8@5:8 <>5;8 AE669$ 5 J B8C7B8B 5<CE5 B7 A<@ 669 C:< 5;8 AE669 5<5;8G<7@5 J;8:85;8 @<J =:7BA8 J EGG< 8B5<=8$ 7F8: @B 78@8:E@B8:5<<I 5;8 J<:I0 68 ?7@A :<S @B F 9 86>7:F69 G6 @58B <@5;8:<CI 5< G 9 <E5;5;8 :<G8 5< 5;8F 5;89 B? @C8B$

5 7 A8@8: 669 BF7558B5; 5 ?8:75 =68 7C8 6<G8 ME@B8: 5 @B7@A =9 <F85;7@A F<:85; @ C:E 5 <> ; :B @<J <?8: <>5 @<J :8 <@69 : :869 F85 J75;7@5;8 6G $;89 :8 >:8HE8@569 G<I8@<>0 =E5 EC;5 5 5 5< J;7C;5 :8>8: :8 7 : :869 88@0 @B 5766F<:8 86B<F5: ?8: 8B$ 5 7 0 ;<J8?8:0 6J 9 G< 7=68 5; 5 5;89F 9 =8 8@C<E@58:8B0 @B <@ 5;7 CC<E@50 7> ><: @< <5;8:0 75 7

P ;8@8L5A8@8: 57<@F 9 J75@8 75 8[+57@C57<@$;8G<:57<@<>75 88@>:<@75678 ?766 A8<> :A8@578:87 M N 5 68 5<@8 HE :58: 68 7@ J7B5;5; @ 75 J 58@9< : A<$

@8C8 :9 ><: F 8@ J ; < A< F<E@5 7@88:7@A 5< =8 : F8B J75; 7C8
L8 @B J75; A<<B <@8 ; 8 ><: F 7 <> F<:8 7F G<:5 @C8 5; @
F7A; 5 ;8 EGG< 8B$ > C<E: 80 7> 9<E 7@58@B 5< C5 7F G68
F 58E: @B 685 <5; 8: B< 5; 8 J<: I @B <@69 ><66< J 7@ 5; 87: 58G
75 7 @<5 <> FEC; 7FG<:5 @C8 J; 5 I7@B <> 7C8 L8 9<E C ::90 <
6<@A 75 ; 8 B B<8 @<5 > 66 <>0 <: <5; 8: J7 8 =8; ?8 75 86> 7FG:<D
G8:69$P ; 8:8 7 @< =8558: J8 G<@ ><: CE557@A 58G 7@ 7C8 5; @
C<F F<@ G7C I L80 @B 5; 8 ><: F <> 7C8 L8 J; 7C; 7 @<J E E 669
8FG6<98B =9 5; 8 =8 5 AE7B8 7 ?8:9 67I8 F7@7 5E:8 G7CI$ 9
<J@ L8 7 C<G78B >:<F ; 586C; 7<: @B8:8AAR$ 5 7 <> J:<EA; 5 7:<@
J75; G<7@5 @B 8BA8
58868B$ 5 J87A; 50
7@C6EB7@A G7I8B
; @B680 7 ><E:
G<E@B $ 4<: CE5D
57@A 58G 7@ 7C80
5; 8 G<7@58B 8@B <>
5; 8 ; 8 B 7 6F< 5
8LC6E 7?869 8FD
G6<98B 0 5; 8 BS8
8@B 7 ; @B9 ><:
G<67 ; 7@A 5; 8F EG0
; E5 7 G:7@C7G 669
E 8B ><: CE557@A 7@
; :B @<J$ G :5
">:<F 75 F 7@8
CE557@A J8 G<@0 75
7 7@? 6E =68
A: G@86$ 5 7 @ 5ED

: 669 : 5; 8: J I J :B 7FG68F 8@5 J; 8@ 75 7 @<5 =87@A 8FG6<98B
><: 75 68A757F 58 GE:G< 80 @B 7 67I869 5< A7?8 :7 8 5< FEC; 5:<@A

P ; 7 <= 8:? 57<@7 @<5 F B8 J75; <E5 :8 <@$; ?8 88@5; 8 ; 8 B <> <@8 5E F=68
<> 5 67A; 5 5 G0 7@ C<@ 8HE8@C8 <> 75 ; @B68 ; ?7@A =88@ G8:><: 58B =9 @ 7@A8D
@7<E =E5 E 868 :: @A8F8@5 <> @ 76 $

6 @AE A8$ @$ C:E ;8 5$: 76J 9$58: F7@70 E@68 ' 75 ' ;8 B$7 ' G:<58C58B$ J75;' ' 68 5;8:@$ C G0 <:$7@$ <F 8$ <5;8:$ J 9$" @9$ 558FG5 ' ; ?8$ =88G$ F B80$><:$5;8$ I8$ <>$ C<@?8@78@C80 5<$ > ;7<@$ @$7C8 L8$ J75;$ ' F<? =68$;8 B0 =E5$75$ 88F ' B7>>7CE65$ <:$7FG< 7=68$5<$ G:<BEC8$ <@8$ 8LC8G5$ 5 5;8$ 8LG8@ 8$ <>$ CE557@A$ HE 67578 0 @B$ =9$7@C:8 7@A$5;8$ J87A;5$

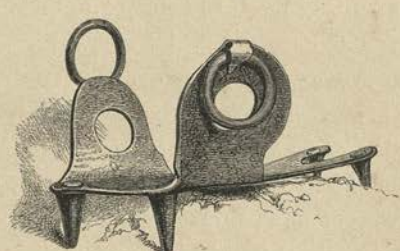
* :$ $ $U8@@8B9$ M<>$ 5;8$ >7:F$ <>$ 4 7:= 7:@$ i$
<$N0 J;< 8$G: C57C 6 C ' HE 7@5 @C8$J75;$F<E@5 7@ $
88:7@A0 @B$ J75;$5;8$E 8$ @B$ F @E> C5E:8$ <>$5<<6 0
F I8 ' ;7 ' <G7@7<@$ G : ' 57CE6 :69$? 6E =680 ; 'C<@ $
5:7?8B$5;8$=8 5'5; 5 ' ; ?8$ 88@$0 =E5$8?8@75 88F ' 5<
F8$ 5<$ =8$ B8>7C78@5$ 7@$:7 ' A7B759 0 @B$ @<5$ 5<$;8$ <
G<J8>>E6 ' J8 G<@$ ' 5;8$ F<:8$ C<F F<@$ I7@B$ J75;$
5;8$>7L8B$;8 B$;8$ 7F ' & + ' - G78$ 7@ 5:EF8@5$ J;7C;$ 7 '
;<J@$ 7@$5;8$ @@8L8B$ B7 A: F$ 1 5;8$ 7@?8@57<@$ <>$:$ 8 678
$ 58G;8@0 @B$ 75$ @D
J8: ' 5;8$GE:G< 8 '><:$ -----
J;7C;$;8$ B8?7 8B$ 750
@ F869 0 ><:$A7?7@A$=85D
58:$;<6B$ EG<@$ @<J$
@B$7C8$5; @$C @$=8$<=5 7@8B$>:<F$5;8$C<F F<@$ 6G8@ 5<CI 0 @B$><:$
CE557@A$ @$<CC 7<@ 6 58G$;8$ F 58E:$ C :C869$:8HE7:8 ' @95;7@A$
F<:8$ 7FG< 7@A0 =E5$ ><:$ 8:7<E ' 7C8 J<:I$ ' ;8 ?78:$ J8 G<@$7 '
7@B7 G8@ =68$

<G8: <@ ' :F8B$J75;$5;8$G:<G8:$5<<6 0 7C8 6<G8 ' :8$@<5$ <
B @A8:<E ' ' F @9$G6 C8 ' J;7C;$ GG8 6 68 ' 5<$5;8$7F A7@ 57<@$
;87:$ C8@5$<:$B8 C8@5$7 ' @8C8 :769$6 =<:7<E ' M5<$5;< 8$J;<$B<$5;8$
J<:IN0 @B$5;89$F 9$5;8:8><:8$=8$58:F8B$B7>>7CE65$;89$ 2 '$ ' @<5$
5<$=8$B @A8:<E $ 85$5;89$6J 9 ' 88F$B @A8:<E 0 ><:$<@8$7 ' G:<D
><E@B69$C<@?7@C8B$5; 5$7>$;8$ 67G ';8$J766$C8:5 7@69$A<$5<$5;8$=<55<F$

Hence, any man, who is not a fool, takes particular care to preserve his balance, and, in consequence, we have the noteworthy fact that accidents have seldom or never taken place upon ice-slopes.

The same slopes covered with snow are much less impressive, and *may* be much more dangerous. They may be less slippery, the balance may be more easily preserved, and if one man slips he may be stopped by his own personal efforts, provided the snow which over-lies the ice is consolidated and of a reasonable depth. But if, as is more likely to be the case upon an angle of 50° (or anything approaching that angle), there is only a thin stratum of snow which is not consolidated, the occurrence of a slip will most likely take the entire party as low as possible, and in addition to the chance of broken necks, there will be a strong probability that some, at least, will be smothered by the dislodged snow. Such accidents are far too common, and their occurrence, as a rule, may be traced to the want of caution which is induced by the apparent absence of danger.

I do not believe that the use of the rope, in the ordinary way, affords the least *real* security upon ice-slopes. Nor do I think that any benefit is derived from the employment of crampons. Mr. Kennedy was good enough to present me with a pair some time ago, and one of these has been engraved. They are the best variety I have seen of the species, but I only feel comfortable with them on my feet in places where they are not of the slightest use, that is in situations where there is no possibility of slipping, and would not wear them upon an ice-slope for any consideration whatever. All such adventitious aids are useless if you have not a good step in the ice to stand upon, and if you have got that, nothing more is wanted except a few nails in the boots.



Almer and Biener got to the end of their tether ; the rope no longer assured their safety, and they stopped work as we advanced

@B$ C<B8B$ 75$ EG$;<:569$ >58:J :B ' 5;89$ 5:EC I$ ' 5:8 I$ <>$ @<J$ 5; 5$ G:<?8B$ 5< =8$!E 5$ =<?8$ 5;8$ =:7BA8$ <>$ J;7C;$ 5;89$ J8:8$ 7@$ 8 :C;$;8$ 6<G8$ 588G8@8B0$ @B$ ><:$ 5;7:59$ >885$ <:$ < J8$ B8 C8@B8B$ > C8$ 5<$ 5;8$ J 660$ F I7@A$ 58G ' =9$ I7C I7@A$ J75;$ 5;8$ 5<8 0$ @B$5;:E 5D 7@A$ 5;8$:F ' J866$ 7@5<$ 5;8$;<68 ' =<?80$!E 5$ ' 7>$ 5;89$; B$ =88@$:<E@B ' 7@$ ' 6 BB8:$ 5$ 5;7 ' 57F 8$ J8$ J8:8$ C:< 7@A$ 5;8$ EGG8:F< 5$ <>$ 5;8$ C;:E@B $ 88B68 ' 5<$ 9$ 5; 5$ 5;8$ @<J$ J ' <>$ @$ BF7:D =68$ HE 67590$ 5;7 ' G8:><:F @C8$ J<E6B$ <5;8:J7 8$; ?8$ =88@$ 7FG< D 7=68$ 5$ J ' <<@$ <?8:0$ @B$ J8$ 5;8@$ ><E@B$ <E: 86?8 ' EG<@$ ' ;EA8 :;<F=<7B 6$ F ' <>$ 7C80$ @B$ 5766$ 8G : 58B$ >:<F$ 5;8$:A8@578:8$ A6 C78:$ =9$ ' A7A @57C$ C:8? 8$;8$ <@69$ =:7BA8$ <?8:$ 5;7 ' 6<J8:$ C;:E@B$ J ' 5 75 ' 8 58:@$ 8@B0$ @B$ J8$ J8:8$ <=67A8B$ 5< B<E=68$; CI$ 5<$ A85$ 5<$ 75$ E557@A$ C<@57@E8B$ ><:$; 6> @ ;<E:$ >58:$ 75$ J 'G 8B0$ @B$ 75$ J ' $ ' 1 2 ' =8><:8$ 5;8$ L8 ' 5<GG8B$ J<:I0$ @B$ J8$ C<E6B$ 5 6 5$ 5E:@$ = CI$ @B$ 6<<I$ C<F><:5 =69$ 5$ 5;8$ ><:F7B =68$ 6<G8$ EG<@ J;7C;$ 8?8@$;<E: ' ; B$ =88@$ G8@50$ ¥¥

;8$ <6$ ' <68@5$ 7 ' @<5$ 67I869$ 5<$ C<FG858$ L?75;$ 5;8$ <6$ BE$ &8 @50$ @B$ ' J<E6B$:8C<F F8@B$ @9$ G8: <@$ J;<$ 5 :5 ' 5<$ C:< ' 75$ 5< 66<J$;7F 86>$ G68@59$ <>$ 57F 80$ G68@59$ <>$:<G80$ @B$ FG68$ AE7B8 ' G<J8:$;8:8$ 7 ' @<$ B7>>7CE659$ J ; 58?8:$ EG<@$ @9$ G :5$ <>$ 5;8$:<E580$ 8LC8G57@A$ EG<@$ 5;8$ 588G$ 6<G8 ' 7F F8B7 5869$ =86<J$ 5;8$ EF F75$ <@ 8 C;$ 7B8$) ;8@$ J8$ ::7?8B$ EG<@$ 5;8$ &6 C78:$ BR :A8@578:80$ <E:$ J<:I$ J ' ' A<<B$ ' <?8:$) 8$ B:<?8$ ' 5: 7A;5$ 5: CI$ 5<$ 5;8$ C; D 685 ' <>$ <A@ @0$ @B$ 5;8@C8$ 5;8$ J 9$ 68B$ <?8:$ > F767 :$ A:<E@B$ <<@ >58:$ BE I$ J8$ A<5$ 7@5<$ 5;8$;7A;$:< B$ 5$ 68 ' 7@8 0$ @B$ 5$ ' ::7?8B$ 5$; F<E@7L$ E:$ 6 =<E: ' J8:8$ BE69$:8J :B8B$ <E:7 ' =:<EA;5$ E ' C; FG A@8$ @B$ 5;8$ <5;8:$ B:7@I ' J;7C;$:8$:8 8:?8B$ ><:$ 5;8$ > 75;>E60$ =E5$ =8><:8$ F9$; :8$ J ' C<@ EF8B$ ' >866$ 688G$ 7@$ @ :F C; 7:$ ' 68G5$ <E@B69 E@576$ B 9=:8 I0$ @B$ 5;8@$ 5E:@8B$ 7@5< =8B$ @B$ J8@5$ 5<$ 688G$ A 7@$

P$ 5$ <CCEG78 ' =<E5$ <@8 7L5;$ <>$ @$ 7@C;$ EG<@$ 5;8$ F G$ ' 8 57F 58$ 75 ' ;87A;5$ 5$ Q ' >885$;8$ 5:7 @AE6 57<@$ <>$!75$ 78E685$ G6 C8 ' 5;8$ EF F75$ <>$ 5;8$ G ' 0 Q2$ >885$ =<?8$ 5;8$ 8 $;7 0$ ' 5;7@I0$ 7 ' : 5;8:$ 5<$;7A;$

¢48J' ; ?8'5;8'><:575EB8'<>' <E¢5<' ;<@<E:'
'>:78@BR' ECC8 ¢' J75;<E5' '5<EC;'<>'8@?9$3

& ' 9' @<J'G :58B' >:<F' E $ 7 ' @8J' 8FG6<98:' ; B' @<5' ::7?8B' 5' ; F<E@7L¢'=E5' :<5' C<@ 7B8:8B' 5; 5' ;8' J ' ;<E@B'=9' ;<@<E:'5<' J 75'><:' ;7F¢' @B'5;E ' ;:7 57 @' 7F8:¢'<>' &:7@B86J 6B¢'=8C F8' F 9'68 B7@A' AE7B8$

7F8:' B7 G6 98B' G575EB8'><:' F<E@5 7@88:7@A' 5' @' 8 :69' A8$) ;76 5' 5766' '?8:9'9<E@A' F @' ;8' J 'I@<J@' ' 'C: CI'C; F<7 ' ;E@58:¢' @B' ;8' <<@' B8?86<G8B'7@5<' @' CC<FG; ;8B' AE7B8$;<8' J;<' ; ?8':8 B' :$) 766 R A: G;7C' CC<E@5'<>'5;8'>7: 5' C8@5'<>'5;8') 8558:;<:@'P' J766':8F8F=8:'5; 5¢' J;8@';7'G :59' J ' GG:< C;7@A' 5;8'5<G'<>'5;8' F<E@5 7@¢'5J<' 5: @A8:'F8@' J8:8' 88@'C67F=7@A';9' ' ;A;569' B7>>8:8@5' :<E58¢'<@8'<>' J;<F'C ::78B' EG<@';7'=CI' ' 9<E@A'>7: 5:88¢'=: @C;8¢'68 ?8¢' @B' 66$:$) 766 R AE7B8'J8:8' 8L5:8F869'7@B7A@ @5' J75;'5;8 8'5J<' 5: @A8:'MJ;<'J8:8'8?7B8@569' B858:F7@8B'5<'=8'5;8'>7: 5' 5'5;8' EF F75N¢' @B'5 6I8B'<>'A7?7@A'5;8F' =6<J $?8@5E 669'5;89'A ?8'5;8F' 'C I8'<>'C;<C<6 58'7@ 58 B¢' @B' B8C6 :8B'5; 5' 5;89' J8:8' A<<B' >866<J $ Z ;E'5;8' G7G8'<>' G8 C8' J ' F<I8B¢' @B' 5: @HE766759' :87A@8B' =85J88@' 5;8' :7? 6' ><:C8 $3 ;:7 57 @' 7F8:' J ' <@8'<>'5;8 8'5J<' F8@$

;7'J '7@' 2$ @' ';8'F B8'5;8'>7: 5' C8@5'<>'5;8' 7A;8:' @B'5;8' =@C;¢'5;8'><:F8:'J75;' ' :$ ::7@A5<@'MN¢' @B' 5;8'6 558:' J75;' ':$ <:A8 $ 7@C8'5;8@';8' ; 'J @B8:8B'>:' @B

P F ' ' '' $'4 '$' ' $

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near, from Dauphiné to the Tyrol.* With the exception of Melchior Anderegg, there is not, perhaps, another guide of such wide experience, or one who has been so invariably successful; and his numerous employers concur in saying that there is not a truer heart or a surer foot to be found amongst the Alps.

CHRISTIAN ALMER.†

Before recrossing the chain to Courmayeur, we ascended the Aiguille Verte. In company with Mr. Reilly I inspected this mountain from every direction in 1864, and came to the conclusion that an ascent could more easily be made from the south than upon any other side. We set out upon the 28th from Chamounix to attack it, minus Croz, and plus a porter (of whom I will speak more particularly presently), leaving our comrade very downcast at having to kick his heels in idleness, whilst we were about to scale the most celebrated of his native Aiguilles.

Our course led us over the old Mer de Glace—the glacier made famous by De Saussure and Forbes. The heat of the day was

* Most of his principal exploits are recorded in the publications of the Alpine Club.

† Engraved, by permission, from a photograph by Mr. E. Edwards.

over, but the little rills and rivulets were still flowing along the surface of the ice ; cutting deep troughs where the gradients were small ; leaving ripple-marks where the water was with more difficulty confined to one channel ; and falling over the precipitous walls of the great crevasses, sometimes in bounding cascades, and sometimes in diffused streams, which marked the perpendicular

ON THE MER DE GLACE.

faces with graceful sinuosities.* As night came on, their music died away, the rivulets dwindled down to rills ; the rills ceased to murmur, and the sparkling drops, caught by the hand of frost, were bound to the ice, coating it with an enamelled film which lasted until the sun struck the glacier once more.

* Admirably rendered in the accompanying drawing by Mr. Cyrus Johnson. The "ripple-marks" are seen in the engraving upon p. 356.

The weathering of the walls of crevasses, which *obscures* the internal structure of the glacier, has led some to conclude that the stratification which is seen in the higher glacier-regions is *obliterated* in the lower ones. Others, Agassiz and Mr. John Ball for example, have disputed this opinion,* and my own experiences accord with those of these accurate observers. It is, undoubtedly, very difficult to trace stratification in the lower ends of the Alpine glaciers ; but

ON THE MER DE GLACE.

we are not, upon that account, entitled to conclude that the original structure of the ice has been obliterated. There are thousands of crevasses in the upper regions upon whose walls no traces of bedding are apparent, and we might say, with equal unreasonableness, that it was obliterated there also. Take an axe, and clear away the ice which has formed from water trickling down

* See Agassiz in *Atlantic Monthly*, Dec. 1863 ; and Mr. J. Ball in *Phil. Mag.* Dec. 1857 (supplementary number), and April 1859.

6# 7 / " 4 ' H1) %' ! * * 7' ' ( ) !

5;8' > C8 0' @B' 5;8' J8 5;8:8B' 7C8' =8@8 5;0' @B' 9<E' J766' 8LG< 8' 8CD 57<@ ' <>' 5;8' F7@A68B' 5: 5 ' <>' GE:8' @B' <>' 7FG8:>8C5' 7C80' @B' 88' C68 :69' 8@<EA;' 5; 5' 5;8' G:7F757?8' 5:EC5E:8' <>' 5;8' A6 C78:' ; ' @<5' =88@' 8>> C8B0' 65;<EA;' 75' ; ' =88@' <= CE:8B$

%<5J75; 5 @B7@A' /' 5; 5' ; ' =88@' J:7558@' 5<' 5;8' C<@5: :9' =9' ?8:9' 8F7@8@5' E5;<:7578 0' ' =8678?8' 5; 5' 5;8' 5: 5 ' <>' 7C8' J;7C;' :8' ><:F8B' =9' J8 5;8:7@A0' EG<@' 5;8' =8B ' <>' @<J' 5; 5' :8' B8G< 758B' 7@' 5;8' ;7A;8:' :8A7<@ 0' 8L7 5' ME@68 ' 5;89' :8' <:7A7@ 669' <>' ?8:9' F 66' 5;7CI@8 N' 5<' 5;8' 8@B ' <>' 5;8' A6 C78: 0' @B' 5; 5' F @9' <>' 5;8' ?87@ ' <>' =6E8' 7C8' J;7C;' :8' 88@' <@' 5;8' E:> C8 ' <>' 5;8' 6<J8:' G :5 ' <>' 6G7@8' A6 C78: ' :8' @<5;7@A' F<:8' 5; @' 5;8' <E5C:<GG7@A' <>' 5;8' G:7F :769' ;<:7S<@5 6' 5: 5 $

<F8' <>'5;< 8' J;<' ; ?8' F 7@5 7@8B' 5;8' C<@5: :9' <G7@7<@0' ; ?8' 8?7B8@569' ; B' '?8:9'7@ E>>7C78@5'7B8 ' <>' 5;8' 8L58@5' 5<' J;7C;' 5;8' EGG8:' @<J ' :8' G8:? B8B' =9' 5;8' 5: 5 ' <>' =6E8' 7C80' @B' <>' 5;87:' 5;7CI@8 $' @' 5;8' GG8@B7L' 75' 7 ' ;<J@' 5; 5' 5;8:8' J8:8' 7@' 5;8' EGG8:' QQ' >885' <>' @<J' 5' 5;8' EF F75' <>' 5;8' <6' B8' (6G8667@80' 7@' 0' @<' 68 ' 5; @' 1 ' 6 98:' ' <>' 7C80' <@8' <>' J;7C;' J ' F<:8' 5; @' ' 7@C;8 ' 7@' 5;7CI@8 0' J;76 5' @EF8:<E ' <5;8:' ' @A8B' >:<F' ; 6> @ ' 7@C67' 5<' <@8' 7@C;$;8' 5<5 6' B8G5;' <>' 5;8 8' 1 ' 6 98:' F<E@58B' 5<' Q f' 7@C;8 0' <:' @8 :69' <@8 58@5;' <>' 5;8' F ' J;7C;' J8' J8:8' =68' 5<' G8@85: 58$ ' > :' ' ' F' J :80' 75' ; ' @<5' =88@' G:<?8B' 8LG8:7D F8@5 669' 5; 5' 75' 7 ' G< 7=68' M=9' C<FG:8 7<@0' <:' 7@' @9' <5;8:' J 9N' 5<' <=6758: 58' ' G6 58' <>' 7C80' 8?8@' @' 7@C;' 7@' 5;7CI@8 0' G6 C8B' =85J88@' @<J0' <:' =85J88@' 7C8' <>' 7@>8:7<:' B8@ 759' 8LC8G5' =9' 67HE8D > C57<@' <>' 5;8' 8@57:8' F $

5;8:' J;<' ; ?8' G:<@<E@C8B' A 7@ 5' 5;8' G< 7=76759' <>' 5;8' ;<:7S<@5 6' 5: 5 ' <>' =6E8' 7C8' C<@5:7=E57@A' @9' <>' 5;8' ?87@ ' <>' =6E8' 7C8' J;7C;' C<@ 575E58' 5;8' ' 2 $ @' <>' A6 C78: 0' ; ?8' B<@8' <

P ;8'6 58' :7@C7G 6' .$ ' $ 4<:=8 ' J ' 5;8' >7: 5' 5<' 55 C;' @9' 7FG<:5 @C8' 5<' 5;8' ?87@8B' 5@7C5E:8' <>' A6 C78: $ ' A 5;8:' 5;8' ><66<J7@A' B8>7@757<@ ' <>' 75' >:<F' B7>>8:8@5 G A8 ' <>';7 ' ' Y' ' C @@<5' F<:8' CCE: 5869' B8 C:7=8' 750' 5; @' =9' C 66D 7@A' 75' ' 33 ' 2 ' ><:F8B' =9' 5;7@' @B' B867C 58' =6E8' @B' =6E7 ; J;758' = @B ' <:' 5: 5 0' J;7C;' GG8 :' 5<' 5: ?8: 8' 5;8' 7C8' 7@' ' ?8:57C 6' B7:8C57<@0' <:' : 5;8:' J;7C;' 0' =9' 5;87:' GG< 757<@0' ><:F8B' 5;8' 8@57:8' F ' <>' 5;8' 7C8$;8' B7:8C57<@' <>' 5;8 8' = @B ' J

EG<@' 5;8' A:<E@B' 5; 5' 66' 5: C8 ' <>' 5: 57>7C 57<@' :8' <=6758: 58B' =8><:8'5;8' GG8 : @C8' <>'5;8' ?87@8B' 5:EC5E:8$ 5'7 0' ;<J8?8:0' @<J' J866' I@<J@' 5; 5'5;8'G:7F757?8' 5:EC5E:8' ; ' =88@' B858C58B' & ' 5;8' GG8 : @C8' <>'5;8' ?87@ ' <@' 5;8' E:> C8 ' <>' A6 C78: K5;8' ?87@ 0' 7@B88B0' ; ?8' =88@'<= 8:?8B' 7@' 5;8' J 66 ' <>' C:8? 8 ' CE557@A' 5;8' <:7A7@ 6' 5:EC5E:8$P' 5'7 ' G:<?8B' 5;8:8=9' 5; 5' 5;8' <:7A7@ 6' 5:ECD 5E:8' :8F 7@ ' 7@' 8L7 58@C8' B<J@' 5<' '6<J' G<7@50' @B' 5; 50' <' > :' 5 68 50' 75' 7 ' @<5' <=6758: 58B$P "

5' ; ' 6 <' =88@' E:A8B' 5; 5' Z' 5;8' =6E8' ?87@ ' <>' A6 C78: ' :8' @<5' 6J 9 0' @<:' 8?8@' A8@8: 669 0' EC;' ' J 8' ;<E6B' '5<' :8 E65' >:<F' 5: 57>7C 57<@$;8' 6 558:' J<E6B' >E:@7 ;' E ' J 75;' B7 57@C5' G6 @8 ' 8LD 58@B7@A' G : 6686' 5<' 8 C;' <5;8:' ><:' C<@ 7B8: =68' B7 5 @C8 ' 5;:<EA;'5;8' A6 C78:' 0 =E5' 5;7 0' 5;<EA;' <F857F8 ' 5;8' C 80' 7 ' =9' @<' F8 @ ' 5;8' A8@8: 6' C; : C58:' <>'5;8' 5:EC5E:8$3) 75;' 5;7 ' <= 8:? 57<@' ' A:88$ 5' F<E@5 0' ;<J8?8:0' <@69' 5<' 97@A0' 5; 5' 75' 7 ' 7FG< 7=68' 5<' C<@

G : >786' 5<' 5;8' 68@A5;' <>' 5;8' A6 C78:3' MG$ $N' Z @' <F8' G :5 ' <>' 5;8' A6 C78:' 75' GG8 :' F<:8' B8?86<G8B' 5; @' 7@' <5;8: $ $ 5' G8@85: 58 ' 5;8' $ ' <>' 5;8 A6 C78:' 5<' A:8 5' B8G5; $ 5' 7 ' @' 7@58A: 6' G :5' <>' 75 ' 7@F< 5' 5:EC5E:8'3 MG$ $N' ć ć ;8'=:8 B5;' <>' 5;8 8' M= @B N' ? :78 ' >:<F' ' F 66' >: C57<@' <>' @' 7@C;' 5<' 8?8: 6' 7@C;8 '3 >G$ N$ Z' ;7 ' 5:EC5E:8' C<@ 7 5 '7@' 5;8' 658:@ 57<@' <>' F<:8' <:' 68 ' G8:>8C569 C:9 5 667 8B' 7C8' 7@' G : 6686' 6 98: 0' <>58@' 5;7@@7@A' <E5' 65<A85;8:' 67 I8' ?87@ ' 7@' F :=68Y MG$ N$

4<:=8 R Z' ?87@8B' 5:EC5E:8' 3' 7 ' >:8HE8@569' CE50' =<5;' ;<:7S<@5 669' @B' ?8:57C 669 0' =9' <5;8:' (87@ 0' J;7C;'6 558:' 88F'5<' F8'5<'; ?8' C68 :69' 'B7>>8:8@5' <:7A7@' >:<F'5;8' ><: F8:$:<G8:' B7 C:7F7@ 57<@' ; ' @<5' ;75;8:5<' ; 8@' F B8' =85J88@' 5;8' 5J<$ = 8:?8: ' <F857F8 ' C 66' <@80' <F857F8 ' 5;8' <5;8:0' @B' <F857F8 ' =<5;0' 5;8' Z' ?87@8B' 5:EC5E:8$3 5' J<E6B0' ' 5;7@I0' =8' C<@?8@78@5' @B' GG:<G:7 58' 5<' 58: F' 4<:=8 R 5:EC5E:8' Z' 5;8 6 F7@ 58B' 5:EC5E:8' <>' A6 C78:$3 @' 10' EG<@' 5;8' E:> C8' <>' ' A6 C78:' 7@' 5;8' . I<= ; ?@' B7 5:7C50' .><:5;' &:88@6 @B0' ' J' 5;:88' 8:78 ' <>' ?87@ ' C:< 7@A' 8 C;' <5;8:' 7@' 5;:88' B7>>8:8@5' B7:8C57<@ 0' ><:F7@A' ' C:< = :' <:' @85 J<:I' G 558:@' EG<@' 5;8' 7C8$;7 ' J ' C8:5 7@69' @<5' 4<:=8 R 5:EC5@:8$

P' ;7 ' <>'C<E: 8' G9<?8 ' 5; 5' 5;5;8' <:7A7@' <>' 66' 5;8' ?87@ ' 7 ' @<5' ><E@B' 7@' 5: 57>7C D 57<@0' ;E5' 75' B<8 '@<5' G:<?8' M ' <F8' GG8 :' 5<' 5;7@I N' 5; 5' ' <>' 5;8' ?87@ ' ; ?8' ' B7>>8:8@5' <:7A7@$

_' '=8678?8' 5; 5' ' ; ?8' 88@' 5;8' G6 @8 ' <>' 5;8' <:7A7@ 6' =8BB7@A' 5766' :8F 7@7@A' G : 6686' 5<' 5;8' E:> C8' 7@' <F8' 7C8=87A ':>6< 57@A'7@5<' '7 C<' 90' J;7C;' ; B' C<F8' >:<F' 'A6 C78:' 5'68 5' Q ' F768 '6<@A$ >' ' F' @<5' F7 5 I8@0' 5;7 '7 ' ' F< 5'7FG<:5 @5' @B' 7A@7>7C @5' > C5$

6 7 / *)) 1) !) ( ) !

7B8: 567 5 66 <> 5 ; 8 =6E8 ?87@ ; ?8 5 ; 87: <:7A7@ 7@ 5 ; 8 5: 57>78B =8B <> @< J @B 7C8 >:<F J ;7C ; A6 C78: : 8 =<:@$ @9 G8: <@ J ; < ; =88@ C6< 8 5< @ Z7C8 > 66 3 <@ <@8 <> 5 ; 8 G:7@C7G 6 6G7@8 A6 C78: @B <= 8:?8B 5 ; 8 A:8 5 6E:C ;7@A ><: J :B J 75 ; 5 ; 8 G:7F757?8 =8B :8F 7@7@A G : 66860 <: @8 :69 <0 5< 5 ; 8 E:> C8 <> 5 ; 8 A6 C78:0 FE 5 >886 5 ; 5 75 7 8L5:8F869 7FG:<= =68 5 ; 5 5 ; 8 F 8 J766 ; 8 < :8 C<FG C58B 6<J8:B<J@ 5< Z>E:@7 ; E J 75 ; B7 57@C5 G6 @8 8L58@B7@A G : 6686 5< 8 C ; <5 ; 8 : ><: 3 QD 5 J 766 =8 >865 5 ; 5 <F8 <> 5 ; 8 M J 766 ; 8 < F ; 8B EG 5 ; 5 5 ; 8 <:7A7@ 6 5:EC5E:8 J 766 =8 A<5 :7B <>0 5 ; 5 <5 ; 8: 0 J ;7C ; B8 C8@B F<:8 A8@5690 J 766 :8F 7@ 7@5 C50 =E5 J 766 85568 B<J@ J 75 ; 5 ; 87 : =8B F<:8 <: 68 7@C67@8B 5< 5 ; 8 ; <:7S<@ 0 @B 5 ; 5 75 J 766 =8 ?8:9 8LD 5: <:B7@ :9 C ; @C8 7> 5 ; 8 <> 5 ; 8 5: 5 <> @9 5J < <> 5 ; 8 F 8 C<7@C7B8 J 75 ; 7@ F @9 B8A:88 $

/ G<@ 5 ; 8 8 A:<E@B =8678?8 5 ; 5 F @9 <> 5 ; 8 ?87@ <> 5 ; 8 ?87@8B 5:EC5E:8 <> A6 C78: :8 @<5 ; 7@A F<:8 5 ; @ 5 ; 8 EG5E:@8B 6 98: <> =6E8 7C8 J ;7C ; :8 >< : F8B EG<@ @B =85J88@ 5 ; 8 =8B <> @<J 5 ; 5 :8 B8G< 758B 7@ 5 ; 8 ; 7A ; 8 : :8A7<@ $P F > : >:<F 5 ; 7@ I 7@A 5 ; 5 5 ; 8 <CCE: :8@C8 <> 5 ; 8 J ; <68 <> 5 ; 8 ?87@ <> =6E8 7C8 J ;7C ; :8 ><E@B 7@ A6 C78: ; <E6B =8 CC<E@58B ><: 7@ 5 ; 7 J 9$ B< @<5 =8678?8 5 ; 5 5 ; 8 C<F=7@ 57<@ <> B7>>8:8@5 ? :78578 <> 7C8 5 ; 5 :8 ><E@B 7@ A6 C78: 0 J ;7C ; ; ?8 =88@ :8>8: :8B 5< =9 ? :7<E E5 ; <: 5 ; 8 2 2 C @ =8 CC<E@58B ><: 7@ 5J < <: 8?8@ 7@ 5 ; :88 J 9 $?<7B7@A B7 GE58B G<7@5 0 J 766 <= 8:?8 5 ; 5 5 ; 8:8 :8 5 68 5 5J < <5 ; 8: F<B8 =9 J ;7C ; F @9 ?87@ <> =6E8 7C8 :8 E@B<E=58B69 G:<BEC8B 7@ A6 C78: $

47: 50 =9 J 58: >:88S7@A 7@5 < C:8? 8 $; ?8 88@ ; E@B:8B <> C:8? 8 7@ & :88@6 @B @8 :69 >E66 <> J 58: 0 @8?8: O2 >E66 [5 ; 8 J 58: 86B<F C F8 J 75 ; 7@ 5J < <: 5 ; :88 >885 <> 5 ; 8 E:> C8 <> 5 ; 8 A6 C78:$; ?8 88@ 5 ; 8 8@57:8 E:> C8 <> 5 ; 8 J 58: 7@ EC ; C:8D ? 8 >:<S8@ @B >:88S7@A$; ?8 88@ 5 ; 8 J 58: <F857F8 >:<S8@ <67B 5 <@8 8@B @B :8F 7@7@A 67HE7B 5 5 ; 8 <5 ; 8: 8@B 0 @B 7@ 5 ; 8 J 66 <> 7C8=8:A ; ?8 88@ 8C57<@ <> C:8? 8 5 ; 5 ; ?8 =88@

P <F857F8 0 G:<= =69 5 ; 7C I 8@8B 679 G:8 E:8$

@8 :69' >7668B' J75;' J 58:0' 7@' J;7C;' 5;8' J 58:' ; ' =88@' >:<S8@' <67B$P'
;8 8' ?87@ ' 7@' 7C8=8:A ' :8' >:8HE8@569' <@8' 5<' 5;:88' >885' 5;7C I0' @B'
C @' ;8' 88@' 5' 8?8: 6' F768 R B7 5 @C8$ >' ?87@ ' <>' =6E8' 7C8' :8' @<5
><:F8B' 7@' 5;8' 6G7@8' A6 C78:' 7@' 5;8' F8' F @@8:0' 75'7 ' <@69' =8C E 8'
5;8:8' :8' <E5685 ' >:<F' 5;8' C:8? 8 ' =9' J;7C;' 5;8' J 58:' 8 C G8 $
5' 7 ' : :8' 5<' 88' 'C:8? 8' 8?8@' G :569' >7668B' J75;' J 58:' 7@' 5;8' 6G $>'
8C<@B690' =9' 5;8' C6< 7@A' 5<A85;8:' <>' C:8? 8 $;8' E@8HE 6
F<57<@' <>' 5;8' +:5 ' <>' ' A6 C78:' C E 8 ' C:8? 8 ' C<@57@E 669' 5<
<G8@' @B' 5<' C6< 8' EG' 0 @B' 5;8' J 66 ' <>' 5;8 8' C:8? 8 0' J;85;8:'
Q0 '>885' :F<:8' =<?8'5;8'68?86'<>'5;8' 8 0' <:' J;85;8:'<@69' 0'
66' =8C<F8' J8 5;8:8B' @B' F<:8' <:'68 ' C< 58B' J75;' GE:8' 7C8$?8@'
@ ::<J' C:8? 8 ' 7@' 5;8' ;7A;' :8A7<@ 0' J866' =:7BA8B' J75;' @<J0' :8'
@<5' 8L8FG5$;8' J :F' 7:' <>' F7B EF F8:' G8@85: 58 ' 5;8' C; F 0'
@B0' 7 58B' =9' 5;8' G87"C<6 57<@' <>' @<J' J 58:0' A6 S8 ' 5;8' J 66 '>:<F'
5<G' 5<' =<55<F$;8' EG8:>7C7 6' C< 57@A ' <>' 7C8' J;7C;' :8' 5;E '><:F8B'
EG<@' 5;8' 7B8 ' <>' C:8? 8 ' ? :9' A:8 569' 7@' 5;7C I@8 ' CC<:B7@A' 5<
C7:CEF 5 @C8 K7@' ' 7@A68' C:8? 8' 5;89' F 9' : @A8' >:<F' ' 5;7C ID
@8 ' <>' 68 ' 5; @' @' 7@C;' 5<' F<:8' 5; @' '><<5$ ' ;8' C:8? 8 ' C6< 8'
EG' 0 5;8' E:> C8 ' <>' 5;87:' 7C9' J 66 ' :8' =:<EA;5' 7@5<' C<@5 C50 5;89'
:8A868' @B' 5;8' C< 68 C8B' >76F ' J766' 5;8@' GG8 :' ' ?87@ ' <>' GE:8'
7C8' 7@' 5;8' A8@8: 669' J;757 ;' F ' <>' 5;8' A6 C78:$) ;8@' <@8' C<@D
7B8:' 5;8' F9:7 B ' <>' C:8? 8 ' J;7C;' 5;8:8' :8' 7@' @9' A6 C78:0' @B'
5;8' 7@C8 @5' <G8@7@A' @B' C6< 7@A' EG' 5; 5' A<8 '><:J :B0' 75'7 '8 9' 5<
88' 5; 5' ' 6 :A8' G:<G<:57<@' <>' 5;8' ?87@ ' <>' GE:8' 7C8' J;7C;' C<@ 57D
5E58' 5;8' ?87@8B' 5:EC5E:8' <>' A6 C78:' FE 5' =8' C<@ 7B8:8B' ' 5;8'
' &' $ '

@ ;8 8' (87@ ' 7@' 7C8=8:A ' :8' >:8HE8@569' 88@' 7@58: 8C57@A' 8 C;' <5;8:$ ':$ 7@I'
; ' ;<J@' 5;7 ' 7@' @' 766E 5: 57<@' 7@' ;7 ' ' ' $ 8 ' '' ! ' ?<6$ 7$
< G'

>' ; :G8@578:' 6<@A' A< B? @C8B' 5;8' <G7@7<@' 5; 5' 5;8' F<57<@' <>' A6 C78:' J 'G:<D
F<58B' =9' >:88S7@A' <>' J 58:' 7@' C:8? 8 $ 7 ' @<57<@' 7 ' C<F F<@69' :8A :B8B' ' 8LD
G6<B8B0' =E5' 5;8:8' F 9' =8' <F85;7@A' 7@' 75' >58:' 66$
' ;8' F8' 5;7@A' 7 ' 5<' =8' @<57C8B' 7@' :8A :B' 5<' 5;8' =6E8' ?87@ ' <>' 5;8' ?87@8B' 5:ECD
5E:8$;8' ?87@ ' >:8HE8@569' 5;7@' <E5' @B' :8' 6< 50' <:' J866' 7@5<' 68@57CE6 :' F 8 $
;7 ' 7 ' =8 5' 88@' J;8@' 5;8' ?87@ ' :8' :8A :B8B' 7@' ?8:57C 6' 8C57<@ ' <>' 5;8' A6 C78:$

@B' I88G' 5 ; 8' F<E5 ;' <G8@' 5' 5 ; 8' F8' 57F 8 0' @B' ; 8@C8' 5 ; 8' 5 ; : < 5' B<8 ' @<5' =8C<F8' B:9$ 5' @ J8: ' !E 5' ' J8 / ' 5<' I88G' 5 ; 8' F<E5 ;' ; E5 0' J75 ; <E5' @9' G8==68 ' 7@ 7B80 K 7@B88B 0' ' 5 ; 7@ I 0' =8558 : 0 ><:' 7>' 9<E' ; ?8' <CC 7<@' 5<' <G8@' 9<E:' F<E5 ; 0' 9<@' C @' B<' <' J75 ; <E5' J 66< J7@A' @9' G8==68 $ P' ' ' : E68 0' F 58E: 0' @B' G :57CE6 :69' @<?7C8 0' 9 ' ' I88G' 5 ; 87:' F<E5 ; ' ; E5$; 89' 558 F G5' 5<' Z><:C8 5 ; 8' G C80 3 5 ; 89' A<' > 58:' 5 ; @' 5 ; 89' C @' A<' J75 ; <E5' =87@A' C<F G8668B' 5<' <G8@' 5 ; 87:' F<E5 ; ' 5<' =:8 5 ; 8 0' 5 ; 89' G @50' 5 ; 87:' 5 ; : < 5 ' @B' 5<@AE8 ' =8C<F8' G :C ; 8B 0' 5 ; 89' B:7@ I' @B' G8: !N7:8' C<G7<E 69 0' @B 0' =8C<F7@A' 8L ; E 58B 0' B8C6 :8' 5 ; 5' 5 ; 8' B:9@8 ' <>' 5678' 7:0' <:' 5 ; 8' : :8> C57<@' <>' 5 ; 8' 7:' M8?8 : 95 ; 7@A' 7 ' 6 7B' EG<@' 5 ; 8' 7:N 0' 7 ' 7@' > E65$ @' 8?8: 6' CC<E@5 0' 5 ; 8 : 8> <: 80' ' F<E@5 7@ C67F=8:' B<8 ' J866' 5< ; <6B' ; 7 ' 5<@AE8' J ; 8@' ; 8' 7 ' 5' ; 7 ' J<: I$

5' 5 ; 8' 5<G' <>' 5 ; 8' F 66' AE669' J8' C:< 8B' <?8:' 5 ; 8' 7@58:?8@7@A' :<CI ' 7@5<' 5 ; 8' 6 :A8' <@80' @B' ><66<J8B' 75' <' 6<@A' ' 75' J ' >7668B' J75 ;' @<J$ 5' 6 5' 7C8' :8G6 C8B' @<J0' @B' J8' 5E:@8B' <?8:' 5<' 5 ; 8' "<8I ' EG<@' 75 ' 68>5$; : F7@A' :<CI ' 5 ; 89' J8 : 80 A: @757C' 7@' 58L5E:80 >' A:7559 0' ; <6B7@A' 5 ; 8' @ 76 ' J866$ 5' $2 ' J8' G :58B' >:<F' 5 ; 8F 0' @B' C<F G6858B' 5 ; 8' C8@5' =9' '675568' :7BA8' <>' @<J' J ; 7C ;' B8 C8@B8B' 7@ 5 ; 8' B7:8C57<@' <>' 5 ; 8' 7AE7668' BE' <7@8$ 5' $ ' J8' 5<<B' <@' 5 ; 8' E F F75' M 0 2 N0' @B' B8?<E:8B' <E:' =:8 B' @B' C ; 88 8' J75 ;' ' A<<B' GG85758$

' ; ?8' 6:8 B9' G<I8@' <>' 5 ; 8' B7 GG<7@57@A' @ 5E:8' <>' GE:869' G @<: F7C' ?78J+ $; 5' 88@' >:<F' <@5' 6 @C' 75 86>' 7 ' @<5<:7<E 69' E@ 57 > C5<:9$) ; 8@' 9<E' :8' EG<@' 5 ; 5' E F F75' 9<E' 6<<I' B<J@' EG<@' 66' 5 ; 8' :8 5' <>' E:<G8$; 8:8' 7 ' @<5 ; 7@A' 5<' 6<<I' EG' 5<' 0 66' 7 ' =86<J0 5 ; 8:8' 7 ' @<' <@8' G<7@5' ><:' 5 ; 8' 898' 5<' :8 5' EG<@$; 8' F @' J ; <' 7 ' 5 ; 8:8' 7 ' <F8J ; 5' 7@' 5 ; 8' G< 757<@' <>' <@8' J ; <' ; ' 55 7@8B' 66' 5 ; 5' ; 8' B8 7:8 0K ; 8' ; ' @<5 ; 7@A' 5<' G7:8' 5<0' ; 7

P' ' ; 8 :B' 6 5869' <>' 5J<' J866 I@<J@' F<E@5 7@88 : ' J ; <0' E@B8:' 5 ; 8' 7@>6E8@C8' <>' EBB8@' 6 : F0' '+ % :#"' $ # (' .(-'$ ' .' F' ; GG9' 5<' 9' 5 ; 5' 5 ; 89' J8:8' 7B8' 5<' C<EA ;' 5 ; 8 F' E77' A 7@$

>' @B' G8C7F8@' <>' 5 ; 8' ; 7A ; 8 5' :<CI ' <>' 5 ; 8' 7AE7668' (8:58' C @@<5' ; 8' B7 57@D AE7 ; 8B' >:<F' A: @758$; 8' :<CI ' 7 ' 6F< 5' 7B8@57C 6' 7@' HE 675bP' J75 ;' 5 ; 5' 5 5 ; 8' E F F75' <>' <@5' ' <7C@50' @B' 7 ' !7:<67 +69' ' A: @75<7B' A@C7 $ $

G< 757<@' FE 5' @88B ' =8' E@ 57 > C5<:9$' /G<@' 5678' EF F75' <>' 5;8'
(8:58' 5;8:8' 7 ' @<5' 5;7 ' <=!8C57<@$' <E' 88' ? 6689 0' ?766 A8 0' >786B ' 0
9<E' 88' F<E@5 7@ ' 7@58:F7@ =68' :<667@A' J 90' 6 I8 ' :8 57@A' 7@'
5;87:' ;<66<J '0 9<E' ;8 :' 5;8' 57@I67@A' <>' 5;8' ;88G =866 ' ' 75' :7 8 '
5;:<EA;' 5;8' C68 :' F<E@5 7@' 7:0' @B' 5;8' :< :' <>' 5;8' ? 6 @C;8 ' '
5;89' B8 C8@B' 5<' 5;8' ? 6689 ' [=E5' =<?8' 66' 5;8:8' 7 ' 5;8' A:8 5' J;758'
B<F80' J75;' 75 ' ;7@7@A' C:8 5' ;7A;' =<?8' 0 J75;' 75 ' G :I67@A' A6 C78: '
5; 5' B8 C8@B' =85J88@' =E55:8 8 ' J;7C;' EGG<:5' 5;8F0' J75;' 75 '
=:7667 @5' @<J 0' GE:8:' @B' 985' GE:8:' 5;8' > :5;8:' 5;89' :8' :8F<?8B'
>:<F' 5;7 ' E@C68 @' J<:6B$P

?8@' EG<@' 5;7 ' F<E@5 7@ 5<G' 75' J ' 7FG< 7=68' 5<' ><:A85' 5;8'
J<:6B0' ><:' <F8' ?768' J:85C;' C F8' 5<' 5;8' . :B7@' @B' F B8' ;7B8<E '
<E@B ' =9' =6<J7@A' EG<@' ' ;<:@$') ;76 5' J8' J8:8' B8@<E@C7@A' ;7F'
' C; @A8' C F8' <?8:' 5;8' J8 5;8:0 CEFE6<E ' C6<EB ' A 5;8:8B' 7@' 66'
B7:8C57<@ 0' @B' J8' 5 :58B' <>' 7@' ;<5' ; 5G$' @<J' =8A @' 5<' > 66'
;8 ?769' =8><:8' J8' J8:8' <>'5;8' EF F75 :<CI 0' <E:' 5: CI' J ' <= CE:8B'
@B' >:8HE8@569' 6< 50' @B' 8?8:95;7@A' =8C F8' <' 6<GG9' @B' 67GG8:9'
5; 5' 5;8' B8 C8@5' 5<<I' ' 6<@A' ' 5;8' C8@5$' ;8' C;:E@B' J ' :8D
C:< 8B' 5' $ ' 6* *! @B' 5;8@C8' J8' : C8B' B<J@' 5<' 5;8' BE?8:C680'
7@58@B7@A' 5<' ; ?8' ' C :<E 8' 5;8:8' 0 =E5' ' J8' :<E@B8B' GE:' :<CI' '
;<J6' =:<I8' 7FE65 @8<E 69' >:<F' 66' 5;:88' <>' E 0' ><:' 5;8' G<:58:' ; B'
5 I8@' B<J@' 5;8' 58@50' @B' J ' 7@' 5;8' C5' <>' F<?7@A' <>' J75;' 75$
Z 5<G0' 5;8:8 ' J; 5' :8' 9<E' B<7@A^3' 8' <= 8:?8B' 5; 5' ;8' ; B'
5;<EA;5' J8' J8:8' I7668B0' <:' 5'68 5'6< 50' @B' J 'A<7@A' 5<' ; F<E@7L'
5<' C<F FE@7C 58' ;7 ' 7B8 ' 5<' 5;8' '2 ' $&' Z/@> 58@' 5;8' 58@50'
@B' A85' <E5' 5;8' ><<B$3' E5' 7@ 58 B' <>' B<7@A' <' 5;8' G<:58:' >EF=68B'
7@' ;7 ' G<CI85 $' Z&85' <E5' 5;8' ><<B03' J8' :< :8B0' 6< 7@A' 66' G 578@C8$'
Z 8:8' 75' 7 03' 7B' <E:' J<:5;9' >:78@B0' G:<BEC7@A' ' B7:59' G78C8' <>'
=:8 B' =<E5' '=7A' ' '; 6>G8@@9':<66$') 8' 5;:88' 6<<I8B' <68F@69'
5' 5;8' >6E>> C<?8:8B' F<: 86$' 5' J ' G 5' '!<I80K;8' ; B' B8?<E:8B'
8?8:95;7@A$' E55<@0' 6< ?8 0' C;88 80' J7@80' 8AA 0' E A8 K 66' J

P ;8' EF F75' <>' 5;8' 7AE7668' / " ' J ' ' @<J9' B<F80' 6 :A8' 8@<EA;' ><:' '
HE B:7668$' ' J ' E:G:7 8B' 5<' 88' 5;8' A:8 5';87A;5' <>' 8 ' ' :<758 $' G5 7@' . 78E685'
G6 C8 ' 75 ' EF F75' 5' 0QQQ' >885' =E5' ' 5;7@I' 75' F E 5' =8' ?8:9' 67A;569' 6<J8:$56: @' 5;8'
(8:58' 75 86>$

A<@8 K G 5' :8C<?8:9$ 5' J ' 7B68' 5<' A:E F =68(' @B' E 868 ' 5<' J 75$) 8' J8:8' 67A;5(' @B' C<E6B' F<?8' HE7C I690 K +5;8 G<:58:' J ' 6 B8@' 7@ 7B8' @B' <E5$) 8' J8@5' <E:' ; :B8 50 K ;8' ; B' 5<' ;E>>68' @B' 5:<5$ 8' 5:8 F8B' J75;' G8: G7: 57<@(' 5;8' F E55<@' @B' C;88 8' <<S8B' <E5' 7@' =7A' B:<G 0 K +;8 6 :B8B' 5;8' A6 C78:$) 8' ; B' <E:' :8?8@A8(' @B' B:78B' <E:' C6<5;8 ' 5' 5;H' F8'57F8(' =E5' J;8@' J8' ::7?8B' 5' 5;8' <@ ' 5 @(8:5' 5;8' G<:58:' J ' ' J85' ' J8' ; B' =88@' EG<@' <E:' ::7? 6' 5' 5;8' <E?8:C68$) 8' ; 658B' 5' 5;8' 7@@' 5<' A85' ' 675568' ><<B(' @B' 5' ' HE :58:' G 5' 87A;5' :8 8@58:8B' ; F<E@7L(' F7B 5' >7:7@A' <>' C @@<@' @B' <5;8:' B8F<@ 5: 57<@ ' <>' 57 > C57<@' <@' 5;8'G :5' <>' 5;8' ;<586 ' I88G8: $

@8' J<E6B' ; ?8' 5;<EA;5' 5; 5' 5;8' C8@5' <>' 5;7 ' F<E@5 7@(' J;7C;' ; B' =88@' >:8HE8@569' 768B' =8><:8' J75;<E5' ECC8 (' J<E6B' ; ?8' >><:B8B' <F8' A: 57>7C 57<@' 5<' ' G<GE6 57<@' J;< 8' C;78>' EGG<:5' 7 ' B8:7?8B' >:<F' 5<E:7 5 (' @B' 5; 5' 5;8' G:< G8C5' <>' 5;8' G8:8@@7 6' >6<J' <>' >: @C ' J;7C;' F7A;5' =8' 8LG8C58B' 5<' :8 E65' >:<F' 75' J<E6B' ; ?8' 57>68B' 5;8' !8 6<E 9' C<@ 8HE8@5' <@' 5;8' ECC8 ' <>' ><:87A@8: $P

5' J ' @<5' <$; F<E@7L' 5<<B' <@' 75 ' :7A;5 $ ' 5: @A8:' ; B' 7A@<:8B' 5;87:' :8AE6 57<@ (' ; B' 7F G<:58B' 5J<' ><:87A@' AE7B8 (' @B(' >E:5;8:F<:8(' ;8' ; B' BB8B' 7@!E:9' 5<' 5; 5' 7@ E65 K ;8' ; B' @<5' 5 I8@' ' 7@A68' ; F<E@7L' AE7B8$; F<E@7L' J<E6B' =8' :8?8@A8B' 5' J<E6B' =E669' 5;8' ><:87A@' AE7B8 (' 75' J<E6B' 5866' 5;8F' 5;89' ; B' 678B0 K 5;89' ; B' @<5' F B8' 5;8P' C8@5') ;8:8' J8:8' 5;87:' G:<<>' ' ^) ;8:8' ? ' 5;8' >6 A' EG<@' 5;8' EF F75' ^

<<:' ;@8:' @B' 78@8:' J8:8' CC<:B7@A69' C;7?78B' >:<F' G766 :' 5<' G< 5(' >:<F' <@8' 7@@' 5<' @<5;8:(' @B' 5' 68@A5;' C<F G6 7@8B' 5<' F8$ 858:' 8:F(' 5;8' V8:F 55' AE7B8(' 7B' <@' 5;8' @7A;5' 5; 5' J8' :85E:@8B' 5; 5' 5;7 ' J ' 5<' ; GG8@(' =E5' 5;8' 5<:9' 88F8B' 5<<' = E:B' 5<' =8' 5:E8$ ' @<J' = B8' F9' F8@' A<' <E5' A 7@(' @B' ><66<J8B' 5;8F' F9 86>' 5<' 88' 5;8' G<:5$; F<E@7L' J ' A:8 569' 8LC758B$;8' 2' <>' 5;8' '2 ' $ & J ' 5;:<@A8B' J75;' C6 F<E:7@A' F8@$

P' ;8' ; F<E@7L' 5 :7>>' G:7C8' ><:' 5;8' C8@5' <>' 5;8' 7AE7668' 7 '@<J' G6 C8B' 5' 2 F/ 1!

6# 7 / * 4 ' " (') *% ' ' 4 *)> >

;87:' :7@A68 B8: K <@8' V C; :78' C; 5K ' J866 I@<J@' AE7B80' <>' @<' G :57CE6 :' F8:750' =E5' @<5' ' = B' >866<J0' J ' ; : @AE7@A' 5;8' FE6575EB8$ 8' F85' J75;' F<:8' 5; @' ;7 ' F 5C;$ 9' >:78@B' U8@@8B90' J;<' J ' <@' 5;8' G<50' ;8 :B' <>' 5;8' B7 5E:= @C8' @B' :E ;8B' 7@5<' 5;8' >: 90' C<@>:<@58B' 5;8' =E:69' AE7B80' @B' 5;:E 5' = CI' ;7 ' = E:B7578 ' 7@5<' ;7 ' 5885;$

;8:8' J8:8' 5;8' F 58:7 6 ' ><:' ' ?8:9' G:8559' :7<50' =E5' 5;89' F @D A8' 5;8 8' 5;7@A ' =8558:' 7@' 4: @C8' 5; @' J8' B<0' @B' 5;8' A8@ B :F8 K' 5;:88' 5:<@AK C F8' B<J@' @B' B7 G8: 8B' 5;8' C:<JB$;8' AE7B8 ' HE 768B' =8><:8' 5;8' C<CI8B' ; 5 0' @B' :857:8B' 5<' C = :85 ' 5<' 5 I8' 675568' A6 8 ' <>' = 7@5;8' @B' <5;8:' 67HE<: ' F<:8' <:' 68 ' 7@!E:7<E ' 5<' 5;8' ;EF @' >: F8$ /@B8:' 5;8' 7@>6E8@C8' <>' 5;8 8' 57FE6 @5 0' 5;89' C<@D C87?8B' @' 7B8 ' J;7C;' C<F=7@8B' :8?8@A8' J75;' G:<>75$ Z <E' ; ?8' C8@B8B' 5;8' 7AE7668' (8:580' 9<E' 9$ F ' 9' J8' B<@F5' =8678?8' 75$ F ' 90' B<' 75' A 7@' I8' 5;:88' <>' E ' J75;' 9<E0' @B' J8' J766' =85' 9<E' 5J<' 5;<E @B' >: @C '5<' <@8' 5;<E @B0' 5; 5' 9<E' J<@F5' F I8' 5;8' C8@5 ' 3

;7 ' G:<G< 757<@' J ' ><:F 669' @<57>78B' 5<' F80' =E5' ' B8C67@8B' 750' J75;' 5; @I 0' @B' :8C<F F8@B8B' U8@@8B9' 5<' A<' 7@' @B' J7@$ ' CC8G58B0' ;<J8?8:0' ' ;E@B:8B' >: @C' ; :8' 7@' 5;8' =850' @B' C 6CED 6 58B' EG<@' A8557@A' 5J<' ;E@B:8B' G8:' C8@5' <@' F9' 7@?8 5F8@5$ 6 ' ' ;<J' ? 7@' :8' ;EF @' 8LG8C5 57<@ ' ' V C; :78' C; 5' J ' GE5' 7@5<' C<@>7@8F8@50' @B' 65;<EA;' U8@@8B9' C5E 669' C8@B8B' 5;8' 7AE7668' ' J88I' 6 58:0' J75;' 5J<' ; F<E@7L' +7B8 ' @B' 858:' 8::@0' 5;8' =85' C F8' 5<' @<5;7@A$P

;8' J8 5;8:' :: @A8B' 75 86>' !E 5c ' 5;7 ' 5<:F' 7@' ' 58 G<5' =68J' <?8:0' @B' J8' 68>5' 5' <@C8' ><:' 5;8' <@5 @?8:50' 7@' <:B8:' 5<' ;<J' 5;8' ; F<E@7 :B ' 5;8' 8 78 5' J 9' <?8:' 5;8' C; 7@' <>' <@5' 6 @C0' 7@' :85E:@' ><:' 5;8' C7?7675780 ' J;7C;' J8' ; B' :8C87?8B' >:<F' 5;8' C;78>' <>' 5;8' A8@ B :F8 0' @B' @' 7@?75 57<@' 5<' 6<BA8' ' C<FG6 7@5' A 7@ 5' 5;8' :7@AD 68 B8: $) 8' CC8G58B' ;7 ' G<6<A78 0' @B' B8C67@8B' ;7 ' 7@?75 57<@$ %88B68 ' 5<' BB0' 7C;86 :<S 5<<I' @<' G :5' 7@' 5;8' B8F<@ 5: 57<@$

WESTERN SIDE OF THE COL DE TALÈFRE.

CHAPTER XIX.

THE COL DE TALÈFRE.

"'Tis more by art than force of numerous strokes."

HOMER.

THE person who discovered the Col du Géant must have been a shrewd mountaineer. The pass was in use before any other was known across the main chain of Mont Blanc, and down to the present time it remains the easiest and quickest route from Chamounix to Courmayeur, with the single exception of the pass that we crossed upon the 3d of July, for the first time, which lies about mid-way between the Aiguille de Triolet and the Aiguille de Talèfre, and which, for want of a better name, I have called the Col de Talèfre.

When one looks toward the upper end of the Glacier de Talèfre from the direction of the Jardin or of the Couvercle, the ridge that bounds the view seems to be of little elevation. It is overpowered by the colossal Grandes Jorasses, and by the almost equally magnificent Aiguille Verte. The ridge, notwithstanding, is by no means despicable. At no point is its elevation less than 11,600 feet. It

venture, then steered for its left bank to avoid the upper of its two formidable ice-falls, and after descending the requisite distance by some old snow lying between the glacier and the cliffs which border it, crossed directly to the right bank over the level ice between the two ice-falls.* The right bank was gained without any trouble, and we found there numerous beds of hard snow (avalanche débris) down which we could run or glissade as fast as we liked.

Glissading is a very pleasant employment when it is accomplished successfully, and I have never seen a place where it can be more safely indulged in than the snowy valley on the right bank of the glacier de Triolet. In my dreams I glissade delightfully, but in practice I find that somehow the snow will not behave properly, and that my alpenstock *will* get between my legs. Then my legs go where my head should be, and I see the sky revolving at a rapid pace ; the snow rises up and smites me, and runs away ; and when it is at last overtaken it suddenly stops, and we come into violent collision. Those who are with me say that I tumble head over heels, and there may be some truth in what they say. Streaks of ice are apt to make the heels shoot away, and stray stones cause one to pitch headlong down. Somehow these things always seem to come in the way, so it is as well to glissade only when there is something soft to tumble into.†

* Below the second ice-fall the glacier is completely covered up with moraine matter, and if the *left* bank is followed, one is compelled either to traverse this howling waste or to lose much time upon the tedious and somewhat difficult rocks of Mont Rouge.

† In glissading an erect position should be maintained, and the point of the alpenstock allowed to trail over the snow. If it is necessary to stop, or to slacken speed, the point is pressed against the slope, as shown in the illustration.

6# 7 7# ! ! !' 1 ' 4 ' ' ' ' " (

%8 :' 5 ; 8' 58 : F 7@ 57<@' <>' 5 ; 8' A6 C78 :' J 8' C<E6B' @<5' ?<7B' 5 : ?8 : D 7@A' ' G<:57<@' <>' 75 ' =<F7@ =68' F<: 7@8U =E5' 5' $ ' $ $ J 8' J8 : 8' C68 :' <>' 75U @B' 5 ; : 8 J' <E : 86?8 ' EG<@' <F 8' G : 7@A9' 5E : >' C<@ C7<77 ' 5 ; 5' <E :' B 9R ' J<: I' J ' <?8 :$ @' ; <E :' >58 : J : B ' J 8' : 8 EF 8B' 5 ; 8' F :C ; U C :< 8B' 5 ; 8' ' <7 : 8' 5<: : 8@5' =9' ' =: 7BA8' ' 675568' =86< J' &: E855 U @B' 5' >7?8' <RC6<C I' 8@58 : 8B' <E : F 98E :U ; ?7@A' <CCEG78B' <F8J ; 5' 68 ' 5 ; @' 58@' ; <E : ' <@' 5 ; 8' J 9$:$ &7 : B68 5<@8R ' G :59' C F8' 7@U ' =8678?8U =<E5' >< E :' ; <E : ' >58 : J : B U <' 5 ; 8 : 8' J ' @<' B<E=5' 5 ; 5' J8' F B8' ' ; <: 58 :' G ' 5 ; @' 5 ; 8' <6' BE' & 8 @50 @B' ' =8678?8' J8' B7 C<?8 : 8B' ' HE7C I 8 :' J 9' <>' A8557@A' >: <F' ; F<E@7L' 5<' <E : F 98E :U <:' ' ' 5 ; @' J 766' =8' >< E@B' 86 8 J ; 8 : 8U <' 6<@A' ' 5 ; 8' C ; 7@' <>' <@5' 6 @C' : 8 F 7@ ' 7@' 75 ' G : 8 8@5' C<@B757<@$R+

P' <FG :7 <@' <>' 5 ; 8' <6' B8' :7<685' J75 ;' 5 ; 8' <6' B8' 68>:8' J 766' ; <J' J ; 5' ' A:8 5' B7>>8:8@C8 7@' 8 8' 5 ; 8 : 8' F 9' =8' =85 J 88@' 5 : C I ' J ; 7C ;' :8' @8 :69' 7B8@57C 6$ 4<:' ' B7 D 5 @C8' <>' 8?8 : 6' F 768 ' 5 ; 8 8' : <E58 ' :8' C : C869' F<: 8' 5 ; @' ; 6> F 768' G :5$ %8 :69' 8?8 : 9' 58G' <>' 5 ; 8' >< : F 8 :' 7 ' B7>>7CE65U J ; 76 5' 5 ; 8' 6 558 :' ; '@<' B7>>7CE659' J ; 58?8 :$; 8' : <E58' J8' B<G58B' <?8 :' 5 ; 8' <6' B8' 68>:8' F 9' G8 : ; G ' =8' 7F G : <?8B$ 5' F 9' =8' G< D 7=68' 5<' A<' B7 : 8C569' >: <F' 5 ; 8' ; 8 B' <>' 5 ; 8' &6 C78 :' B8' :7<685' 5<' 75 ' : 7A ; 5' = @ I U @BU 7>' <U 5' 68 5' 5 ; 7 : 59' F 7@E58 ' F 7A ; 5' =8' ?8B$

; 8' >< 66< J 7@A' 7 ' ' C<F G6858' 67 5' <>' 5 ; 8' < C 668B' G 8 ' C : < ' 5 ; 8' F 7@' : 7BA8' <>' 5 ; 8' : @A8' <>' <@5' 6 @CU J 75 ;' 5 ; 8' 98 : ' 7@' J ; 7C ;' 5 ; 8' >7 : 5' G A8 ' J 8 : 8' 8>>8C58BU ' > :' ' ' I @<J' 5 ; 8 F ' [K $ <6' B8' : 86 5858' M 2N' =85 J 88@' 7A$ BE' & 6 C78 :' @B' 7A$ B8' : 86 5858$ Q$ <6' B8' 7 A8U =85 J 88@' 7A$ B8' 7 A8' @B' 7A$ B8' 7<@@ 9$ $ <6' BE' ' F8' M N' <?8 :' 5 ; 8' ' F 8' BE' & <E58 :$ 2$ <6' BE' <@5' 6 @C' M N' <?8 :' <@5' 6 @C$ $ <6' B8' 6 ' : 8@? ' M N' =85 J 88@' <@5' 6 @C' @B' <@5' EB75$ $ <6' B8' 6 ' <E :' <@B8' M 1N' <?8 :' 6 ' <E :' <@B8$ 1$ <6' BE' & 8 @50 =85 J 88@' 6 ' <E :' <@B8' @B' 7A $:=:88 $ $ <6' 78 : : 8' . < 8G ;' M N' <?8 :' 7A$ B8' R =<E68 ' F 8@5$ $ <6' B8' 68>:8' M N' =85 J 88@' 7A $ 68>:8' @B' :7<685$ $ <6' B8' :7<685' M 2N' =85 J"88@' 7A $ 68>:8' @B' :7<685$ $ <6' ' <68@5' M N' =85 J 88@' 7A$ B8' :7<685' @B' <@5' ' <68@5$ Q$ <6' BR : A8@578 :8' M N' =85 J 88@' <@5' ' <68@5' @B' 68' <E :' %<7 :$ $ <6' BE' ; : B<@@85' M N' =85 J 88@' 7A $' BR : D A8@578 :8' @B' ; : B<@@85$ 2$ <6' BE' <E :U =85 J 88@' 7A $' BE' ; : B<@@85' @B' <E :$

'

Z' @' 6F< 5'8?8:9' :5 8LG8:78@C8'7 ' J<:5;' F<:8'5; @'G:8C8G5 $3

C ! ! !

' <>'5;8' 8LCE: 7<@ ' 5; 5' J8:8' 85' B<J@'7@' F9'G:<A: FF8'; B' =88@'C ::78B'<E5 J75;' 5;8' 8LC8G57<@' <>'5;8' C8@5' <>'5;8' 558:D ;<:@ @B' J8'@<J'5E:@8B'<E:' > C8 '7@'75 ' B7:8C57<@ ;E5'7@ 58 B' <>' :85E:@7@A' '5;8' (6' <E:@ @C;8 J8'5<<I' ':<E58' C:< 'C<E@5:9 @B'= AA8B'EG<@'<E:' J 9'5;8' EF F75'<>'5;8' E7@8558$

) 8'G 8B'5;8'@7A;5'<>'.E69'2 5' < 5 E@B8:'5;8':<<>'<>'5;8' A8@7 6' 7:: S @B' <@'5;8' 5;' J8@5' =9'5;8' (6'BR 66<F<@5' @B' 5;8' <6' B8'6 ' 8@85:8' M 2 N' 5<' ;8:F<@5 @8$P') 8' 68G5'5; 5' @7A;5' 5' 5;8'C; 685 ' <>' ; @:7<@' M ' ><E6' G<5 J;7C;' ;<E6B' =8' ?<7B8BN 68>5'5;8F' 5' $ ' 5;8' @8L5' F<:@7@A' @B' >58:' ' ;<:5' C: F=68'<?8:'5;8' 6<G8' =<?8 @B' ' ; 6> F768'5: FG'<@'5;8'A6 C78:' B8' :8@89 J8'C:< 8B' B7:8C569'5<' 5;8' E7@8558 @B' J8@5' 6F< 5' 5: 7A;5'EG'75$;8:8'7 ' @<5 ' EGG< 8 @<5;8:'F<E@5 7@'7@'5;8' 6G ' <>'5;8' F8';87A;5'5; 5'C @'=8' C8@B8B' <'8 769$ <E'; ?8' <@69'5<' A<' ;8 B'[EG<@'75 ' <E5;8:@' 7B8' <@8' C @' J 6I' =<E5' 6F< 5' @9J;8:8$

;<EA;' ' G8 I' 5;E ' 67A;57@A69'<>' ' ?8:9':8 G8C5 =68'G8 I ' J766'@<5 B<' @95;7@A'<>'5;8' I7@B'7@':8A :B'5<'5;8' ?78J' J ;7C;' 75' A7?8 $' 5' 7 ' ; GG769'G6 C8B'7@':8 G8C5'5<'5;8' :8 5' <>'5;8' 8@@7@8' 6G ' @B' ' ' 5 @B G<7@5'75' ; ' @<5' F @9' EG8:7<: $' <E' 88' F<E@5 7@ ' @B' @<5;7@A' =E5' F<E@5 7@ $' 5' 7 ' ' <68F@K <F8' J<E6B' 9' 'B:8 :9K?78J ' =E5'75'7 ' ?8:9'A: @B$' ;8'A:8 5' <F=7@

4<:' :<E58'' 88' G'<>'5;8' (6689'<>' (6G8667@8 85C$

6# 77* 1) F' ' 4 ' *) <

M 20 2N0' J75;' 75 '@<=68' = CIA:<E@B' <>' 5;8' J;<68' : @A8' <>' <@5'
6 @C0' @8?8:' 6<<I ' <' =7A' '75' B<8 ' >:<F' ;8:8$ @' 5;8' C<@5: :9'
B7:8C57<@0' 5;8' 558:;<:@' <?8:G<J8:' /' =8 7B8 $;8' '8@5'
BR 8:8@ 0' 65;<EA;'C6< 8:0' 6<<I ' ' F8:8' <E5678:' <>' 75 ' A:8 5' @87A;D
=<E:0' @B' 5;8' @<J ' <>' <@58' < 0' =8;7@B0' 88F'7@58@B8B' ><:' @<'
<5;8:' GE:G< 8' 5; @' 5<' A7?8' :8;8>' 5<' 5;8' C: A ' 7@' >:<@5$ <' 5;8'
<E5;' 5;8:8' 7 ' @' 8@B68 ' :: 9' <>' 88R ' @B' 8CC R0' = CI8B' =9' 5;8'
A:8 5' 5 67 @' G8 I 0' J;76 5' 5<' 5;8' @<:5;' <@5' 68E:8E:' M Q0 N'
;<6B ' 75 ' <J@' A 7@ 5'5;8' F<:8' B7 5 @5') 76B 5:E=86$
) 8' A 7@8B' 5;8' EFF75' 5' $ 0P' @B' 5 98B' 5;8:8' @' ;<E:' @B'
' ; 6>$ 9' > 75;>E6' AE7B8 ' 5;8@' BF<@7 ;8B' F8' 5; 5' :8: 98@0'
J;75;8:' J8IJ8:8' =<E@B0' J ' 5766' > :' J 90' @B' 5; 5' J8' ; B' 985' 5<'
C:< ' 5J<' 6<>59' :7BA8 $ <' J8' :8 EF8B' <E:' ; :@8 ' @B' B8G :58B' 0
@<50' ;<J8?8:0' =8><:8' ' ;EA8' C 7:@' ; B' =88@' =E765' <E5' <>' 5;8' =6<CI '
<>' A@87 ' J75;' J;7C;' 5;8' EF F75' 7 ' =8 5:8J@$;8@' J8' 5:<558B'
B<J@' 5;8' 6<G8 ' <>' 5;8' E7@8558' <?8:' 5;8' A6 C78:' B8' :8@890' @B'
C:< ' 'G ' J;7C;' M7>' 75' B8 8:?8 ' ' @ F8N' F 9' =8' C 668B' 5;8' <6'
B8 ' <:5<@ 0' >58:' 5;8' @87A;=<E:7@A' G8 I $:<F' 5;8@C8' J8' G:<D
C88B8B' C:< ' 5;8' A:8 5' 58F F ' A6 C78:' 5<J :B ' 5;8' <6' BR 6877$
;8' G :5' <>' 5;8' A6 C78:' 5; 5' J8' 5: ?8: 8B' J ' <?8: G:8 B' J75;'
@<J' J;7C;' C<FG6858609' C<@C8 68B' 75 ' @EF8:<E ' G75> 66 $) 8'
F :C;8B' C:< ' 75' 7@' 7@A68' >7680' @B0' <>' C<E: 80' :<G8B' 5<A85;8:$
66' 5' <@C8' 7F8:' B:<GG8B'7@5<' ' C:8? 8' EG' 5<' ;7 ' ;<E6B8: $ '
GE/8B' ;7' 5;8' :<G8' 7F F8B7 5869 0' =E5' 5;8' @<J' A ?8' J 9' ' 75' J '
=8FA' B<@80' @B' ' ; B' 5<' G:8 B' <E5' F 9' :F ' 5<' 5<G' F 9' B8 C8@5$
78@8:' ;86B' > 50' =E5' 7B' >58:J :B 0' 5; 5' ;7 '>885' J8@5' 5;:<EA;' '
J866 0' <0' ><:' ' F<F8@50' 66' 5;:88' J8:8' 7@' 5;8' ! J ' <>' 5;8' C:8? 8$
) 8' @<J' 658:8B' <E:' C<E: 80' <' ' 5<' 5 I8' 5;8' >7 E:8 ' 5: @ ?8: 869 0'
@B' >58:' 5;8' C8@5:8' <>' 5;8' A6 C78:' J ' G 8B' C; @A8B' 75' A 7@' @B'
F B8' B7:8C569' ><:' 5;8' EFF75' <>' 5;8' <6' BR 68@$

P >58:' C:< 7@A' 5;8' A6 C78:' B8' :8@890' J8' C8@B8B' =9' <F8' B8=:7 0' @B' 5;8@' =9'
<F8' C67>>9' A:<E@B0' 5<' 5;8' A6 C78:' J;7C;' E::<E@B ' 5;8' G8 I' EG<@' 5;8' <E5;' 0 =<:8' 5<'
5;8' 68>5' M5; 5' 7 ' 5<' 5;8' J8 5M' @B' J8@5' EG' 5;8' 8BA8' <>' 5;8' A6 C78:0' @B' 6 569' 5<<I' 5<'
5;8' :858' <>' 5;8' :7BA8' J;7C;' B8 C8@B ' 5<J :B ' 5;8' E5; J8 50' @B' ><66<J8B0f5' 5<' 5;8'
EF F75' V<G! G T*

5 7 C :C869@8C8 :9 5< <= 8:?8 >58: J ; 5 J 7B EG<@ G$ 5; 5 75 7 F9 7@? :7 =68 G: C57C8 5< 8F G6<9 :<G8 J ;8@ 5: ?8: 7@A @<J C<?8:8B A6 C78:$ @9 AE7B8 8?8@ 5;8 =8 5 <@8 <=!8C5 5< =8 :<G8B F<:8 8 G8C7 669 8 :69 7@ 5;8 F<:@7@A J ;8@ 5;8 @<J 7 ; :B$;89 <=!8C5 <F857F8 =8C E 8 5;89 5;7@I 75 7 E@@8C8 :9$:8? 8 5; 5 :8 =:7BA8B =9 @<J :8 6F< 5 6J 9 F<:8 <: 68 G8:C8G57=68 =9 E@BE6 57<@ <@ 5;8 E:> C8 5;8 @<J B:<<G B<J@ @B ;<66<J F :I 5;8 C<E: 8 <> 5;8 C; F =8@8 5;$ @ 8LG8:78@C8B AE7B8 E E 669 @<57C8 5;8 8 6F< 5 7FD G8:C8G57=68 J :7@I68 58G <@8 7B8 <: 5;8 <5;8: 5;8 C 8 F 9 :8HE7:8 @B : :869 =:8 I 5;:<EA;E@ J :8 $ &E7B8 5;7@I 5;8:8 7 @< <CC 7<@ 5< 8F G6<9 :<G8 =8C E 8 5;89 5;7@I 5; :0 5;89 J766 =8 5 I8@ =9 E:G:7 8$ 7C;86 :<S E 8B 5< =8 <> 5;7 <G7@7<@$ 8 E 8B 5< 9 5; 5 <@69 7F=8C768 @B C;76B:8@ :8HE7:8B 5< =8 578B EG 7@ 5;8 F<:@7@A$ 5<6B ;7F 5; 5 7@ 5;7 G :57CE6 : F 558: J C;76B 5<;7F$ Z <E 88 5;8 8 5;7@A F9 A<<B :<S @B ?<7B 5;8F$ B< @<50 8LC8G5 9<E G<7@5 5;8F <E5 5< F8 @B < 5; 5 J;7C; 7 @<5 B @A8: 5< 9<E 9 B @A8: 5< F8$3 ; ; :G8: <@8R 898 A85 =9 E 80 5;8 68 7 :<G8 :8HE7:8B G:<0 58C57?8 A 7@ 5 5;8 8 ;7BB8@ G75> 66 0 =E50 CC<:B7@A 5< F9 8LG8:7D 8@C80 5;8 7A;5 @8?8: =8C<F8 < I88@ 5; 5 5;89 C @ =8 ?<7B8B J75; E@? :97@A C8:5 7@590 @B $F8@57<@8B J ; 5 <CCE::8B EG<@ 5;8 58@@@ A6 C78: 5< ;<J 5; 5 5;7 7 <$ J 866 :8F8F=8: F9 >7: 5 G A8 <> 5;8 <6 ;8<BE68 K 5;8 8 78 5 <> 5;8 ;7A;8: 6G7@8 A6 C78: G 8 $) 8 ; B :<G80 =E5 F9 AE7B8 7B 75 J @<5 @8C8 :90 ;8 I@8J 66 5;8 C:8? 8 $ <J8?8:0 J8 B7B @<5 A< HE :58: <> F768 =8><:8 ;8 B:<GG8B 5;:<EA; 5;8 @<J 7@5< C:8? 8 EG 5< ;7 @8C I 8 J ; ;8 ?9 F @0 @B J<E6B C :C869 ; ?8 8L5:7C 58B ;7F 86> 6<@8 0 @9;<J0 ;8 J ?8:9 A6 B <> F9 7 5 @C8$) ;8@ ;8 A<5 <@ 5< ;7 68A A 7@0 ;8 7B0 Z) 8660 ; B @< 7B8 5; 5 5;8:8 J ; C:8? 8 5;8:8 3 8 @< 6<@A8: <=!8C58B 5< E 8 5;8 :<G80 @B J8 G:<C88B8B0 EG<@ F9 G :50 J75; A:8 58: G8 C8 <> F7@B 5; @ =8><:8$; ?8 C:< 8B 5;8 G 5;7:588@ 57F8 7@C8 5;8@0 @B ; ?8 7@? :7 =69 7@ 7 58B EG<@ =87@A 578B 5<A85;8:$

6# 77# 8 4< *)% !' "8 ' '" ') %' ' ( ) !'

&E7B8 ' <=!8C5 5<' 5 ; 8' E 8' <>' 5 ; 8' :<G8' EG<@' @<J C<?8:8B' A6 C78:0' =8C E 8' 5 ; 89' :8' >: 7B' <>' =87@A' 6 EA ; 8B' 5' =9' 5 ; 87:' C<F : B8 0' @B' 5 ; 7 0' G8: ; G 0' 7 ' 5 ; 8' F<:8' C<F F<@' :8 <@$ <' 766E 5: 58' 5 ; 7 0' ; 8:8' 7 ' @<5 ; 8:' ; 8<BE68' 8LG8:78@C8$) 8' : :7?8B' 5' 5 ; 8' 8BA8' <>' 5 ; 8' 7C80' @B' ' :8HE7:8B' 5<' =8' 578B$ 9' AE7B8' M ' V8: F 55' F @' <>' :8GE58N 7B' 5 ; 5' @<' <@8' E 8B' ' :<G8' A<7@A' C:< ' 5 ; 5' G $ ' B8C67@8B' 5<' :AE8' 5 ; 8' F 558:0' @B' J 8' GE5' <@' 5 ; 8' : <G80' 5 ; <EA ; ' ?8:9' FEC ; ' A 7@ 5' 5 ; 8' J7 ; ' <>' F9' F @0' J ; <' G:<58 58B' 5 ; 5' ; 8' ; <E6B' ; ?8' 5<' E=F75' 5<' G8:G85E 6' :7B7CE68' 7>' J8' F85' @9' <>' ; 7 ' CHE 7@5 @C8 $) 8' ; B' @<5' A<@8' ?8:9' > :' =8><:8' J8' J' '5: 7@' C<F7@A' 7@' 5 ; 8' C<@5: :9' B7:8C57<@$ Z ; 3' C:78B' F9' F @0' Z 5 ; 8:8' 7 ' K' MF <57<@7@A' ' AE7B8' J ; <' E 8B' 5<' =8' I8G5' 5' 5 ; 8' 7>>86' <586' ><:' 5 ; 8' C8@5' <>' <@58' < N 0' 75' J7 ' =8' ' ' 7B0' ' ; 66' @8?8:' ; 8 :' 5 ; 8' 8@B' <>' 5 ; 7 $3' ; 8' AE7B8' J8' F85' J ' >< <J8B' =9' ' 5:7@A' <>' 5<F >< <6 0' @<@8' <>' J ; <F' J8:8' 578B' 5<A85 ; 8:0' @B' ; B' ; 7 ' > C8' C<?8:8B' =9' ' F I' 5<' G:8?8@5' 75' =8C<F7@A' = 58:8B$ >58:' J8' ; B' G 8B0' ' 7B0' Z%<J0' ; <E6B' K* F I8' @9' <= 8:? 57<@ ' 5<' 9<E0' I' ; 7F' J ; 9' ; 8' 5 I8 ' EC ; ' 8L5: <:B7@ :9' C :8' 5<' G:8 8:?8' 5 ; 8' I7@' <>' ; 7 ' > C80' J7@C ; ' J7 ' A:<J' A 7@' 7@' ' J88I0' J ; 8@' ; 8' @8A68C5 ' EC ; ' @' <=?7<E ' G:8C E57<@' 7@' :8A :B' 5<' ; 7 ' >80' J ; 7C ; ' ; 8' C @' <@69' 6< 8' <@C8$3' ; 7 ' J ' HE758' ' @8J ' 7B8 ' 5<' F9' AE7B80' @B' ; 8' 7B' @<5 ; 7@A' F<:8' A 7@ 5' 5 ; 8' E 8' <>' 5 ; 8' :<G8' <' 6<@A' ' J8' J8:8' 5<A85 ; 8:$

' =8 8?8' 5 ; 5' 5 ; 8' E@J7 7@A@8 ' 5<' E 8' ' :<G8' EG<@' @<J ' C<?8:8B' A6 C78:' J ; 7C ; ' =<:@' F<E@5 7@88: ' @<5' E@>:8HE8@569' 8L ; 7=750' :7 8 K 47: 50' <@' 5 ; 8' G :5' <>' 8LG8:5' F8@0' >:<F' 5 ; 8' C<@ C7<E @8 ' 5 ; 5' 5 ; 89' 5 ; 8F 86?8 ' 7@CE:' 675568' :7 I 0' 8C<@B69' 0' <@' 5 ; 8' G :5' <>' 7@>8:7<:' F8@0' >:<F' >8 :' <>' :7B7CE68' @B' >:<F' G7@A' 5 ; 8' J 9 ' <>' 5 ; 87:' EG8:7<: ' 0' @B0' 5 ; 7:B69' >:<F' GE:8' 7A@<: @C8' <:' 6 S7@8 $) ; 58?8:' "+F 9' =8' 5 ; 8' :8 <@0' ' ! 7 8' EG' F9' ?<7C8' A 7@ 5' 5 ; 8' @8A68C5' <>' ' G:8C E57<@' <' 7F G68' @B' <' 8>>8C5E 6$ @' F9' <G7@7<@0' 5 ; 8' ?8:9' >7: 5' 5 ; 7@A' ' A6 C78:' 5: ?8668:' :8HE7:8 ' 7 ' G68@59' <>' A<<B' :<G8$

' C<F F75588' <>' 5 ; 8' @A67 ;' 6G7@8' 6E=' J ' GG<E758B' 7@

1864 to test, and to report upon, the most suitable ropes for mountaineering purposes, and those which were approved are probably as good as can be found. One is made of Manilla and another of Italian hemp. The former is the heavier, and weighs a little more than an ounce per foot (103 ozs. to 100 feet). The latter weighs 79 ozs. per 100 feet; but I prefer the Manilla rope, because it is more handy to handle. Both of these ropes will sustain 168 lbs. falling 10 feet, or 196 lbs. falling 8 feet, and they break with a dead weight of two tons.* In 1865 we carried two 100 feet lengths of the Manilla rope, and the inconvenience arising from its weight was more than made up for by the security which it afforded. Upon several occasions it was worth more than an extra guide.

Now, touching the *use* of the rope. There is a right way, and there are wrong ways of using it. I often meet, upon glacier-passes, elegantly got-up persons, who are clearly out of their element, with a guide stalking along in front, who pays no attention to the innocents in his charge. They are tied together as a matter of form, but they evidently have no idea *why* they are tied up, for they walk side by side, or close together, with the rope trailing on the snow. If one tumbles into a crevasse, the rest stare, and say, "La! what is the matter with Smith?" unless, as is more likely, they all tumble in together. This is the wrong way to use a rope. It is abuse of the rope.

It is of the first importance to keep the rope taut from man to man. There is no real security if this is not done, and your risks may be considerably magnified. There is little or no difficulty in

* Manufactured and sold by Messrs. Buckingham, Broad Street, Bloomsbury.

extricating one man who breaks through a bridged crevasse if the rope is taut; but the case may be very awkward if two break through at the same moment, close together, and there are only two others to aid, or perhaps only one other. Further, the rope ought not upon any account to graze over snow, ice, or rocks, otherwise the strands suffer, and the lives of the whole party may be endangered. Apart from this, it is extremely annoying to have a rope knocking about one's heels. If circumstances render it impossible for the rope to be kept taut by itself, the men behind should gather it up round their hands,* and not allow it to incommode those in advance. A man must either be incompetent,

THE RIGHT WAY TO USE THE ROPE.

careless, or selfish, if he permits the rope to dangle about the heels of the person in front of him.

The distance from man to man must neither be too great nor too small. About 12 feet between each is sufficient. If there are only two or three persons, it is prudent to allow a little more—say 15 feet. More than this is unnecessary, and less than 9 or 10 feet is not much good.

It is essential to examine your rope from time to time to see that it is in good condition. If you are wise you will do this yourself every day. Latterly, I have examined every inch of my rope overnight, and upon more than one occasion have found the strands of the Manilla rope nearly half severed through accidental grazes.

* For example, when the leader suspects crevasses, and *sounds* for them, in the manner shown in the engraving, he usually loses half a step or more. The second man should take a turn of the rope around his hand to draw it back in case the leader goes through.

;E '> :' 5;8' :<G8' ; ' =88@' EGG< 8B' 5<' =8' 8F G6<98B' EG<@' 68?86@ @<J C<?8:8B' A6 C78:@' 5<' G:8?8@5' @9' :7 I' >:<F' C<@C8 68B' C:8? 8 $ @' :<CI ' @B' <@' 6<G8 ' 75' 7 ' E 8B' ><:' ' B7>>8:8@5' GE:G< 8' M@ F869@ 5<' AE :B' A 7@ 5' 67G N@' @B' 7@' 5;8 8' C 8 ' 75' 7 ' 8HE 669' 7FG<:5 @5 5<' I88G' 75' 5 E5@' @B' 5<' G:8 8:?8' ' :8 <@ =68' B7 5 @C8' <@8' >:<F' 5;8' <5;8:$ 5' 7 ' FEC;' F<:8' 5:<E=68 <F8' 5<' I88G' 5;8' :<G8' 5 E5' EG<@ 6<G8 ' 5; @' EG<@' 5;8' 68?86@ @B' EG<@' B7>>7CE65' :<CI ' 75' 7 ' 66' =E5' 7FG< 7=68@ 8LC8G5' =9' B<G57@A' 5;8' G6 @' <>' F<?7@A' <@69' <@8' 5' ' 57F8' M 88' G$ 1 N$

;8:8' 7 ' @<' A<<B' :8 <@' ><:' 8F G6<97@A' ' :<G8' EG<@' 8 9' :<CI @B' ' =8;8?8' 5; 5' 75 ' @88B68 ' E 8' 7 ' 67I869' 5<' G:<F<58' C :868 @8 $ @' B7>>7CE65' :<CI ' @B' <@' @<J 6<G8 ' M>:8HE8@569' 7FG:<G8:69' C 668B' 7C8 6<G8 N' 75' 7 ' ' A:8 5' B? @5 A8' 5<' =8' 578B' 5<A85;8:@ G:<?7B8B' 57@P@ :<G8' 7 ' ; @B68B' G:<G8:69' @ =E5' EG<@' C5E 6' 7C8 6<G8 @ EC;' ' 5; 5 <@' 5;8' <6' ' <68@5' MG$ N@ <:' EG<@' 6<G8 ' 7@' J;7C;' 7C8' 7 ' F7@A68B' J75;' F 66' @B' 6<< 8' :<CI @ EC;' ' 5;8' EGG8:' G :5' <>' 5;8' <7@58 B8 ' C:7@ ' MG$ Q 2N@' 75' 7 ' 6F< 5' E 868 @ =8C E 8' 5;8' 67G' <>' <@8 G8: <@' F7A;5' EG 85' 5;8' 8@57:8' G :59$P' ' F' @<5' G:8G :8B' 5<' 9@ ;<J8?8:@ 5; 5' F8@' ;<E6B' @<5' =8' 578B' 5<A85;8:' EG<@' 7F76 :' 6<G8 $ 87@A' 55 C;8B' 5<' <5;8: ' E E 669' A7?8 ' C<@>7B8@C8@' @B' C<@>7B8@C8 B8C7B8B69' 7 5 ' 5 =76759$ 5' 7 ' F<:8' HE8 57<@ =68' J;85;8:' F8@ ;<E6B' =8' 7@' EC;' G6 C8 ' 5' 66$ >' ' F @' C @' I88G' <@' ;7 '>885' EG<@ @' 'CE5' 7@' @' 7C8 6<G8@' ' 88' @<' :8 <@' J;9';8' ;<E6B' =8

P Y);8@ 8?8: 6 G8: <@ ' :8' B8 C8@B7@A' EC;' G6 C8 @ 75' 7 ' 8?7B8@5' 5; 5'5;8' ' ' C @@<5' B8:7?8' @9' 7 5 @C8' >:<F' 5;8' :<G8@' @B' <' F7A;5' ' J866' =8' E@578B$:569' EG<@' 5;7 ' CC<E@5@ 75' 7 ' E E 6' 5<' G6 C8' <@8' <>' 5;8' 5:<@A8 5' @B' 58 B78 5' F8@ 6 5$ %<J@ 65;<EA;'5;7 ' C @@<5' =8' 58:F8B' ' 8@ 868 ' G:8C E57<@@ 75' 7 ' <=?7<E ' 5; 5 75' 7 ' ' G8:>8C569' E 868 ' <@8@ 7>' 75' 7 ' 5:E8' 5; 5' ' 7@A68' 67G' J<E6B' EG 85' 5;8' 8@57:8' G :59$;8' =8 5' G6 @' ' I@<J' 7 ' 5; 5' J;7C;' J8' B<G58B' <@' 5;8' B8 C8@5' <>' 5;8' <6' ' <68@5@ F869@ 5<' 685' <@8' F @' A<' 7@' B? @C8' E@576' ;8' :8 C;8 ' <F8' 8CE:8' G<7@5$;7 ' <@8 5;8@' B85 C;8 ';7F 86>@ 5;8' :<G8' 7 ' B: J@' EG@ @B' @<5;8:' F @' 7 ' 8@5' B<J"77 5<' !<7@ ;7F@ @B' <' <@' E@576' 5;8' 6 5$;8' 6 5' F @' 576' <CCEG78 ' 5;8' F< 5' B7> CE65' G< 5@ @B' ;<E6B' =8' 5;8' 58 B78 5' F @' =E5' ;8' 7 ' @<5' 8LG< 8B' 5<' @9' :7 I' >:<F' ;7 ' C<FD : B8 ' 67GG7@A@ @B' 5;89@ <>' C<E:8@ B: J" 7@' 5;8' :<G8' ' ;8' B8 C8@B @ <' 5; 5';7 ' G< 7D 57<@' 7 ' 68 ' ; S :B<E ' 5; @' 7>' ;8' J8:8' 5<' C<F8' B<J@' HE758' :' ;7F 86>$

(' % () !' 4 ' 4

B8= ::8B' >:<F' F I7@A' E 8' <>' 5; 5' G :57CE6 :' ><: F' <>' 5 7:C 8$ >' ;8' C @@<5 685' ;7F' I88G' C68 :' <>' EC;' G6 C8 $P

;8:8' J<E6B' ;8' @<' B? @5 A8' 7@' B7 C<E: 7@A' EG<@' 5;8' E 8' <>' 5;8' :<G8 5 A:8 58:' 68@A5;$ ' 7@A68' B 9' EG<@' ' F<E@5 7@R' 7B8' J 766' A7?8 ' C68 :' 7B8 ' <>' 5;8' ? 6E8' <>' ' A<<B' :<G8 @B' <>' 5;8' @EF8:<E ' GE:G< 8 ' ><:' J;7C;' 75' F 9' ;8' 8FG6<98B 5; @' @9' <@8' J 766' <=5 7@' >:<F' :8 B7@A' 66' 5; 5' ; ' =88@' J:7558@' EG<@' 5;8' E=!8C5 =E5' @<' <@8 J 766' =8C<F8' :8 669' 8LG8:5' 7@' 75 ' F @ A8F8@5' J75;<E5' FEC;' 8LG8:78@C8$

4:<F' 5;8' <6' BR 68@' J8' G:<C88B8B' B<J@' 5;8' <F=8' <>' 5;8' F8@ F8' 5<' 5;8' C; 685 ' <>' :8: 98@' @B' G 8B' 5;8' @7A;5' <>' 5;8' 5;' E@B8:' 5;8' :<<>' <>' <E:' <6B' CHE 7@5 @C8' 5;8' J8 65;9' ;8:B F @$ @ 5;8' 5;' J8' C:< 8B' 5;8' (' <:@8:8' G ' 2 ' ><:' :876$ 9' 5;<EA;5 ' J8:8' >7L8B' <@' 5;8' 558:;<:@' @B' F9' AE7B8 ' I@8J' 5; 5 ' J7 ;8B' 5;8F' 5<' CC<FG @9' F8$;89' ; B' @' ?8: 7<@' 5< 5;8' F<E@5 7@' @B' :8G8 58B69' 8LG:8 8B' 5;87:' =8678>' 5; 5' 75' J ' E 868 ' 5< 5:9' 5<' C8@B' 75$ Z $ '' =E5' 558:;<:@' B8 :' 7:' 3 7B 7F8:' Z $ '' =E5' 558:;<:@$3 8' B7B' @<5' G8 I' <>' B7>>7CE659' <:' <>' B @A8:' @<:' J ' ;8' ;7:I7@A' 9 ' 8' <>>8:8B' 5< A< 9$ C =E5' ;8' 8@5:8 58B' 5; 5' 5;8' 558:;<:@' ;<E6B' =8' = @B<@8B$ <5;' F8@' G<I8' > 7:69' 8@<EA;$;89' B7B' @<5' 5;7@' I' 5; 5' @' C8@5' C<E6B' =8' F B8' @' @B' ><:' 5;87:' <J@' C:8B75' ' J866' ' ><:' FG' I8' 5;89' B7B' @<5' J7 ;' 5<' E@B8:5 I8' ' =E 7@8 ' J;7C;' 7@' 5;87:' <G7@7<@' J<E6B' <@69' 68 B' 5<' 6< ' 57F8' @B' F<@89$

P /G<@' 5;7' E=!8C5' :8>8:' 5;8' :8 B8:' = CI' 5<' G$ $ 9<E' :8' <E5' EG<@' @ 8LCE: 7<@' @B' >7@B' 5;8' J<:I' =8C<F7@A' < :BE<E' 5; 5' 9<E' ; ?8' A:8 5' B7>>7CE659' 7@' F 7@5 7@7@A' 9<E:' = 6 @C8' 9<E' ;<E6B' 5' <@C8' :857:8' @B' @<5' 7FG8:7' 5;8' 67?8' <>' <5;8: $ ' F' J866' J :8' 5; 5' 5;8' J75;B: J 6' <>' <@8' G8: <@' ><:' EC;' :8 <@' J<E6B' E E 669' @8C8 75 58' 5;8' :85:8 5' <>' ' 8C<@B' @B' 5; 5' 8LG8B757<@' J<E6B' =8' <>58@' CE5' ;<:57>' 5;7' J8:8' 5<' ; GG8@$) 75;' 5;8' >8 :' <>' 5;7' =8><:8' 5;87:' 898' ' =8678?8' 5; 5' F @9' F 58E:' C<@57@E8' 5<' A<' <@' 6=875' J866' C<@?7@C8B' 5; 5;89' <EA;5' @<5$;89' B<' @<5' J7 ;' 5<' 5<G' 5;8' G<:5' <>' 5;87:' C<F: B8' =E5' 5;89' >:8,GE8@569' E>>8:' F8@5 6 5<:5E:8' 7@' C<@ 8HE8@C8' J;7C;' F< 5' 8FG; 57C 669' B<' @<5' 7 5' 5;87:' 5 =7675' @B' :8 67I869' 5<' 68 B' 5<' <F85;7@A' 8?8@' F<:8' B7 A:88 =68' 5;' @' 5;8' = @B<@F8@5' <>' 5;8' 8LCE: 7<@$;8' F<: 6' 7' 5 I8' @' B8HE 58' @EF=8:' <>' AE7B8 $

' 8@5 5;8F =9 5;8 ;<:5 CE5 5< :876 @B J 6I8B B<J@ 5< (6 <E:@ @C;8 5< 6<<I ><:' .8 @ @5<7@8 ::86$ 8 J ' @<5 5;8:8$;8?766 A8:' 7B 5; 5 ;8 @B 5;:88 <5;8: ; B 5 :58B <@ 5;8 5;' 5< 5:9 5;8 558:;<:@ ;9 5;8 <6B J 9 <@ 5;87:' <J@ CC<E@5$;89 J766 ; ?8 @< 6ECI ' 5;<EA;5 ><:' 5;8 C6<EB ' J8:8 6<J' B<J@ <@ 5;8 F<E@5 7@ ' @B ' J 6I8B EG 5< :8B >E669 8LG8C57@A 5< F885 5;8F$ <:' $J ' ' B7 GG<7@58B$ =<E5 ; 6>D J 9 EG ' J' 'A:<EG <> F8@ C6E 58:8B :<E@B ' C; 685 EG<@ 5;8 <5;8:' 7B8 <> 5;8 5<::8@5 @B C:< 7@A <?8: ><E@B 5; 5 5;8 G :59 ; B :85E:@8B$ .8 @ @5<7@8 @B 8 :' J8:8 5;8:8 $ $ &<::85 @B .$.$ HE7A@ S$;89 ; B ; B @< ECC8 $;8 J8 5;8:5;89 7B ; B =88@ ;<::7=68 @B 5;89 ; B C :C869 :8 C;8B 5;8 A6 C78:' BE 7<@$

' 8LG6 7@8B 5;8 75E 57<@ 5< ::86 @B G:<G< 8B 5; 5 J8 J75;' 8 :' @B @<5;8:' F @ ;<E6B C:< ' 5;8 ;8<BE68 =9 F<<@D 67A;5 <@ 5;8 5; @B 5; 5 :LG<@ 5;8 5;' J8 ;<E6B G75C;' 5;8 58@5 ' ;7A;' ' G< 7=68 EG<@ 5;8 8 5 > C8$ 8 J ' E@J7667@A 5< = @B<@ 5;8 <6B :<E58 @B E:A8B F8 5< 5:9 75 A 7@$ ' G:<F7 8B 5< B< < G:<?7B8B 5;8 @8J :<E58 > 768B$;7 ' 57 >78B ;7F @B ;8 A:88B 5< F9 G:<G< 6$ ' 5;8@ J8@5 EG 5< :876 @B B7 C; :A8B 7F8:' @B 78@8:K J75;' FEC;' :8A:85 ><:' @< 5J< F8@8?8:' 8:?8B F8 F<:8 > 75;>E669 <:' F<:8 J7667@A69$P @ 5;8 @8L5 B 9 5;89 C:< 8B 5< V8:F 55$

;8 5;' J ' <CCEG78B J75;' G:8G : 57<@ $;8 J8 5;8:' J ' 5<:F 9 @B =6 CI : 7@9 ? G<E:' <= CE:8B 5;8 F<E@5 7@ $ <J :B ' 8?8@7@A ' 9<E@A F @ C F8 >:<F' (6 <E:@ @C;8 @B :8G<:58B 5; 5 @ @A67 ;F @ J ' 697@A 5;8:8 8L5:8F869 766$ %<J' J '5;8 57F8 ><:' 5;8 G8:><:F @C8 <> F9 ?<J0" Y <@ 5;8 F<:@7@A <> E@B 9 5;8 5;' ' J8@5 B<J@ 5;8 ? 6689 5< 6<<I' >58:' 5;8 7CI' F @$ @ F9 J 9 'G 8B ' ><:87A@ A8@568F @ J75;' ' FE68 @B 8?8: 6 G<:58: ' 6 B8@ J75;' = AA A8$ F<@A 5 5;8 8 F8@ J8:8 .8 @

P ' E:7@A 5;8 G:8C8B7@A 87A;588@ B 9 ' M ' 8LC6EB8 E@B 9 ' @B <5;8:' @<@D J<:I7@A B 9 N J8 C8@B8B F<:8 5; @ 0 ' >885 @B B8 C8@B8B 0 ' >885$ >' 88 G$ $

@5<7@8' @B' 78 :0 C : :97@A' <F8' = :<F858: $ Z E66< 3' ' 7B0 Z J67 5' :8' 9<E' B<7@A^3' ;89' 8LG6 7@8B' 5; 5' 5;8' ><:87A@8:' ; B' : :7?8B' !E 5' '5;89' J8:8' 8557@A' <E50' @B'5; 5' 5;89' J8:8' 7 57@A' ;7 'G<:58: $ Z' (8:9' J 8660 A<' <@' 5<' :8760' @B' J 75' F8'5;8:8'0 J8' 5 :5' 5' F7B@7A;5' ' A:88B$3' .C @ @5<7@8'5;8@' 7B'5; 5' ;8' ;<E6B'@<5' =8' =68'5<' 8:?8' F8' >58:' E8 B 9'5;8' 5;0 ' ;8' J ' 8@A A8B'5<' 5: ?86' Z J75;' '> F769'<>' B7 57@C57<@3'7@' 5;8' ? 6689'<>' < 5 $ Z' @B' ! :'^3' Z' @B' 8 :' 6 <$3' Z') ;9' B7B' 9<E' @<5 9'5;7 '=8><:8^3' Z 8C E 803' 7B' ;80' Z75' J ' @<5' 85568B$' ;8' 8@A A8F8@5'7 '<>' 6<@A' 5 @B7@A0' =E5' $ ' ' J ' @<5' >7L8B$') ;8@' 'A<5' = CI'5<' 6' <E:@ @C;8'<@'4:7B 9'@7A;50' >58:'68 ?7@A'9<E0' '><E@B' '68558:'@ F7@A'5;8'B 9$3' 'C<E6B'@<5'<=!8C5'5<'5;8' @ J8:0 ;E5'5;8' G:< G8C5'<>' =87@A' 68>5' AE7B868 ' J ' G:<?<I7@A$' ;89' J8@5'EG0' @B' 'B<J@0'5;8'? 6689$

;8' 7CI'F @'B8C6 :8B'5; 5' ;8' J '=8558:0'5;<EA;'5;8'8L8:57<@' <>' 97@A' 'FEC;'5EF=68B';7F'<?8:'<@'5<'5;8'>6<<:'7@' '> 7@57@A'>75$ 8' J '= B69'7@' J @5' <>' F8B7C7@80' @B' '5: FG8B' B<J@'5<' ; ' 57/<@'5<' A85'75$' 5' J '6 58' =8><:8' ':85E:@8B'5<' (6' <E:@ @C;80' ><:'5;8' J8 5;8:' J '58FG8 5E<E 0' @B': 7@'>866'7@'5<:::8@5 $' '>7AE:8' G 8B'F8'E@B8:'5;8'C;E:C; G<:C;$ Z' I2' '^3' Z.8 @ @5<7@8$3' '5;<EA;5'9<E' J8:8' 5' :8763' Z'/ 4 7:'0 J;8@'5;8' 5<:F 'C F8'<@' 'I@8J' J8' ;<E6B'@<5' 5 :5'5< @7A;50' @B' <' C F8' B<J@' 5<' 688G' ;8:8$3' Z 0' 7 86 3' ' 7B'0 Z'5;7 '7 ' 'A:8 5'=<:8$' >'5< F<::<J' 7 '@<5'>7@8' J8' ; 66' @<5' =8' =68'5<' B<' @95;7@A'5<A85;8:$' ' ; ?8' 8@5' J 9'F9' AE7B8 0 :8697@A' <@' 9<E'0 @B'@<J'9<E' :8' A<7@A'5<' 68 ?8' F8'5<'5: ?86' J75;' 'G :59'<>'6 B78 $' ; 5' J<:I'7 '@<5'>75'><:' 2'M;8' F768B0' ' EGG< 8B' 5'5;8' 7FG678B' C<FG67F8@5N0 C @R5'9<E' 8@B' <F8' <@8' 86 8' 7@ 58 B'^3' Z' <0 F<@ 78E:$' ' F' <::90 =E5 F9' J<:B' 7 ' G68BA8B$' ' ;<E6B'67I8'5<' CC<FG @9'9<E0' =E5' C @R5'=:8 I'F9'8@A A8F8@5$3' 9'5;7 '57F8' J8';B' ::7?8B' 5'5;8' 7@@' B<<:$' Z) 866' 75' 7 '@<'> E65' <>' 9<E: $' <F8' G:8 8@569' J75;' 58 :0 @B' ; ?8' <F8' J7@8$3' ;89' C F80' @B' J8' 5' EG' 5766' F7B@7A;50' :8C<E@57@A' <E:' <6B' B?8@5E:8 0 7@' 5;8' 7@@' <>' (6' <E:@ @C;80

;8' J8 5;8:' C<@57@E8B' = B' EG<@' 5;8' 5;0' @B' ' :85E:@8B' 5<' :876$;8'5J<' ::86'J8:8' A 7@';<?8:7@A' =<E'5=8' =<?8'F8@D 57<@8B'C; 6850' @B' '= B8'5;8F' B78E$ @'5;8'8?8@7@A'5;8' 7CI'F @' C: J68B'EG0' 'A<<B'B8 6'=8558:'0 =E5';7'J '5;8'<@69' ::7? 6$;8' <@B 9'C:<JBP'B7B'@<5'C:< '5;8' ;8<BE680'<@' CC<E@5'<>'5;8'C<@D 57@E8B' 5<:F $;8'7@@'J '6<@8690$ 'J8@5'5<'=8B'8 :690' @B'J ' J<I8'5;8'@8L5'F<:@7@A'=9'5;8'7@? 67B'7@HE7:7@A'7>' '; B'Z';8 :B 5;8'@8J $3' Z'U<'0 J; 5'@8J '^3' Z'Y);903' 7B';80' Z' '6 :A8'G :59 <>'A5BB8' J8@5'<>>'5;7'F<:@7@A'5<'5:9'5;8' 558:;<:@0'5 I7@A'J75;' 5;8F' 'FE68'6 B8@'J75;'G:<?7 7<@ $3

'J8@5'5<'5;8'B<<:0' @B'J75;' '5868 C<G8' J'5;8'G :59'EG<@' 5;8'6<J8:' 6<G8'<>'5;8'F<E@5 7@$ 4 ?:80'5;8'6 @B6<:B0' 5<<B'=9$ Z');5'7' 66'5;7' =<E5'^3' '7@HE7:8B0' Z'J;<'7';5;8'68 B8:'<>'5;7' G :59^3' Z ::86$3' Z);5' .8 @ @5<7@8^3' Z 8 0' .8 @' :75<7@8$3' Z' 8 :'5;8:8'5<<'^3' Z 8 0' ;8'7';5;8:8$3' ;8@' 'J' 7@' 'F<F8@5'5; 5' '; B'=88@'=F=<<S68B' @B';EF=EAA8B0' @B' 68 :@8B0'=75'=9'=750'5; 5'5;8' >> 7:'; B'=88@':: @A8B'6<@A'=8><:8D ; @B$;8'5 :5'<@'5;8' 5;'; B'=88@'><:' 'G:867F7@ :9':8C<@@ 7D @C8'0 5;8'FE680'5; 5' 'G 8B0'J 'C<@?8997@A'5<:8'><:'5;8' 55 CI0 5;8'c> F769'<>'B7 57@C57<@R J ' 7A@<:'4$ &7<:B @<0'J;<'; B' !E 5' B8 G 5C;8B'5;8'G :59'5<'> C7675 58'5;8'J 9'5<'5;8' EFF750' @B'J;<0' J;8@'5;8'> C7675 57<@' J 'C<FG6858B0' J ' 5<'=8'5 I8@'5<'5;8'5<G' 6<@A'J75;' 7A@<:' 866 'YP

' J ' A7R8 569' F<:57>78B$ 9'G6 @' J8:8'EG 850'5;8'5 67 @' ; B'C68 :69' 5<68@' ' F :C;'EG<@'F80' @B' ' J'5; 5'5;8' 5E58' 4 ?:8'C;EC I68B'<?8:' F9'B7 C<F>75E:80' =8C E 8'5;8':<E58'=9'5;8' 8 58:@'>C80'7>' ECC8>>E60'J<E6B'@<5'=8@8>75';7'7@@$);5'J '5<' =8'B<@8^' '857:8B'5<'F9':<<F0' @B' <<5;8B'=9'5<=CC<0':8 5EB78B' F9'G6 @ 0'5<' 88'7>'75'J '@<5'G< 7=68'5<'<E5F @<8E?:8'5;8'5 67 @ $ Z';89';?8'5 I8@' 'FE68R'6< B'<>'G:<?7 7<@ $3 ;5'7' 'G<7@5

P' <E:7 5' E E 669'C<@A:8A 58' 5'V8:F 55'EG<@' E@B :e' @B'6 :A8'A @A'6 @B' B:<?8'C:< '5;8' ;8<BE68'G '<@' <@B 9 $

_' ;8'5 67 @' 7@7 58:$ 7A@<:'&7<:B @<';B'E@B8:5 I8@'5;8'=E 7@8 ' :: @A8D F8@5'>8@" 7A@<:' 866 $

C<E6B' @<5 ' 5;89' J8:8' A<7@A' 5<' :8C:< ' 5<' V8:F 55' <@' 5;8' F<::<J =E5' 5; 5' 5;8' 9<E@A' F @' ;<E6B' 7 5' 7@' 5: @ G<:57@A' F 9' = AA A8 ' ;8' ; B' @<5;7@A' 5<' C ::9$) 8' @ 5E: 669' A<5' 7@5<' C<@?8: 57<@$ ' 5<6B' F 9' 5<:9 @B' 68 :@8B' 5; 5' 5;8' 9<E@A' @A67 ;F @' J ' <:B' 4: @C7 ' ' <EA6 0P' J;< 8' :8C8@5' 8LG6<75 K 5;8' C8@5' <>' 5;8' & =86 ' ;<:@+; B' 8LC758B' F 9' J<@B8:' @B' BF7: 57<@$ 8' =:<EA;5' A<<B' @8J $ 6B' 85 :' ; B' 6 5869' =88@' =89<@B' 5;8' <:@67 @B' ; B' :8D G<:58B' 5; 5' ;8' 5;<EA;5' @' C8@5' <>' 5;8' 558:;<:@' J ' G< 7=68' EG<@' 5; 5' 7B8$ 65<8:' ; B' 68>5' V8:F 55 @B' C<E6B' @<5' =8' :8C<?8:8B <' ' B858:F7@8B' 5<' 88 I' ><:' <6B' 858:$ <:B' 4: @C7 ' ' <EA6 ' 8LG:8 8B' ' J :F' B8 7:8' 5<' 88@B' 5;8' F<E@5 7@ @B' =8><:8' 6<@A' 75' J ' B858:F7@8B' 5; 5' ;8' ;<E6B' 5 I8' G :5' 7@' 5;8' 8LG8B757<@$

4 ?78' C<E6B' @<' 6<@A8:' ;7@B8:' <E:' B8G :5E:8 @B' 68@5' E ' <@8' <>' ;7 ' F8@$) 8' C:< 8B' 5;8' <6 ;8<BE68' <@') 8B@8 B 9' F<:@7@A' 5;8' Q5;' <>' .E69 :<E@B8B' 5;8' ><<5' <>' 5;8' =8:' ;8<BE6A685 C;8: C:< 8B' 5;8' 4E:AA8@A685 C;8: @B' B8G< 758B' 58@5 =6 @I85 :<G8 @B' <5;8:' F 558:' 7@' 5;8' 675568' C; G86 5' 5;8' C;J :S 88$>' ' ><E:' J8:8' ;8 ?769' 6 B8@ ><:' J8' =:<EA;5' 8:< ' 5;8' J;<68' <>' F9' 5<:8 ' >:<F' :876 >' :<G8' 6<@8' 5;8:8' J ' =<E5' ' >885$;8:8' J8:8' 5;:88' I7@B $ 47: 5 Q ' >885' <>' 5;8' @766 ' :<G8 8C<@B ' >885' <>' ' 5<E58: @B' G:<= =69' 5:<@A8:' :<G8' 5; @' 5;8' >7: 5 @B 5;7:B F<:8' 5; @' Q ' >885' <>' ' 67A;58:' @B' J8 I8:' :<G8' 5; @' 5;8' >7: 5 <>' ' I7@B' 5; 5' ' E 8B' ><:F8:69' M 5<E5' ; 67@8N$

) 8 B8 C8@B8B' 5<' V8:F 55 <EA;5' @B' 8@A A8B' <6B' 858: @B' A ?8' ;7F' G8:F7 7<@' 5<' C;<< 8' @<5;8:' AE7B8$) ;8@' J8' :85E:@8B' 5<' 5;8' <@58' 4< ' <586 J;<F' ;<E6B' J8' 88' 7557@A' EG<@' 5;8' J 66 7@' >:<@5' =E5' F 9' <6B' '2 ' $ &' 7C;86' :<S$ ' EGG< 8B' 5; 5 ;8' ; B' C<F8' J75;' :$ =E5' '68 :@8B' 5; 5' 5; 5' A8@568F @ ; B' ::7?8B' 7@' 766' ;8 65;' 5' ; F<E@7L @B' ; B' :85E:@8B' 5<' @A6 @B$:<S 5;E ' 68>5' >:88 ; B' =88@' 7F F8B7 5869' 8@A A8B' =9' 5;8' 8?$; :68 ' EB <@ @B' 5;89' ; B' 8<F8' 5<' V8:F 55' J75;' 5;8

P' :<5;8:' <>' 5;8' G:8 8@5' :HE;' <>' WE88@ ;8::9$

5' 4<:' :<E58 @B' 5;8' <5;8:' F8@57<@8B' 7@' 5;8' E= 8HE8@5' C; G58: 88' F G' <>' 5;8' 558:;<:@' @B' 75' A6 C78: $

) ' F) 4' " R %' 4 * % !

F8' <=!8C5 ' <E: 86?8 K @ F869 0' 5<' 558 F G5' 5 ; 8' C8@5' <>' 5 ; 8' 558 : ; <: @

<:B' 4 : @C7 ' ' <EA6 ' @B' ' B7@8B' 5' 5 ; 8' <@58' < 0' @B' ; B' !E 5' >7@7 ; 8B' J ; 8@' :$ EB <@' @B' ' >:78@B' 8@58 : 8B' 5 ; 8' ' ' ' ' ; 89' ; B' :85E : @8B' >:<F' 7@ G8C57@A' 5 ; 8' F<E@5 7@0' @B' <F8' 7B68 : ' 7@' 5 ; 8' :<<F' B8 F @B8B' 5 ; 87 :' 7@58@57<@ $) 8' ; 8 :B' ' C<@>7 : F 57<@' <>' :<SR' 5 58 F 8@50' @B' 68 :@8B' 5 ; 5' :$ EB <@' 7@D 58@B8B' 5<' 85' <E5' <@' 5 ; 8' F<: : <J' 5' 5 ; 8' F8' ; <E :' ' <E: 86?8 $) 8' 68>5' 5 ; 8' :<<F' 5<' C<@ E650' @B' A:88B' 75' ?F ' E@B8 7 : =68' 5 ; 5' 5J<' 7@B8G8@B8@5' G :578 ' ; <E6B' =8' <@' 5 ; 8' F<E@5 7@' 5' 5 ; 8' F8' 57F8' J75 ; ' 5 ; 8' F8' <=!8C5$:$ EB <@' J ' 5 ; 8 : 8><: 8' 7@?758B' 5<' !<7@' E 0' @B' ; 8' CC8G58B' <E :' G : <G< 6$ 8><: 8' BF7557@A' ; 7 ' >:78@B' K :$ B<J K ' 5<<I' 5 ; 8' G : 8C E57<@' 5<' 7@HE7 : 8' J ; 5' ; 8' ; B' B<@8' 7@' 5 ; 8' 6G 0' @B0' ' J866 ' ' : 8F8F=8 : 0' :$ EB <@R' : 8G69' J 0' Z' :$ B<J' ; ' B<@8' <@5' 6 @C' 7@' 68 ' 57F8' 5 ; @' F< 5' F8@$3 8' 5 ; 8@' F8@57<@8B' 8?8 : 6' <5 ; 8 :' 8LCE : 7<@ ' 5 ; 5' J8 : 8' E@I@<J@' 5<' F80' @B' BB8B0' 7@' @ J8 :' 5<' ' >E : 5 ; 8 :' HE8 57<@0' Z' ' C<@ 7B8 :' ; 8' 7 ' ' E>>7C78@569' A<<B' F @' 5<' A<' J75 ; ' E $3 :$ B<J' J ' BF7558B' J75 ; <E5' @9' >E : 5 ; 8 :' HE8 57<@0' @B' J8' 5 ; 8@' J8@5' 7@5<' 5 ; 8' F 558 :' <>' AE7B8 $ EB <@' 5 ; <EA ; 5' 5 ; 5' :<S' @B' <6B' 858 :' J<E6B' =8' E>>7C78@5$; 8' HE8 57<@' J ' :8>8 : : 8B' 5<' 5 ; 8' F8@' 5 ; 8F 86?8 0' @B' 5 ; 89' F B8' @<' <=!8C57<@$

<' :<S' @B' ' =8C F8' C<F : B8 ' <@C8' F<: 80 @B' ' ' 5 ; : 8J' F9 86>' <@' F9' =8B' @B' 5 : 78B' 5<' A<' 5<' 688G0' ' J<@B8 : 8B' 5' 5 ; 8' 5 : @A8' 8 : 78 ' <>' C ; @C8 ' J ; 7C ; ' ; B' >7 : 5' 8G : 58B' E ' @B' 5 ; 8@' =:<EA ; 5' E ' 5<A85 ; 8 :' A 7@$ ' 5 ; <EA ; 5' <>' 5 ; 8' F7 5 I8' 5 ; : <EA ; ' J ; 7C ; ' ; 8' ; B' CC8G58B' 5 ; 8' 8@A A8F8@5' 5<' :$ 0 <>' ; 7 ' E@D J7667@A@8 ' 5<' B<G5' F9' : <E58' 0 <>' ; 7 ' : 8C<F F8@B 57<@' 5<' 5 : @ >8 : ' <E : ' 8@8 : A78 ' 5<' 5 ; 8' C ; 7@' <>' <@5' 6 @C0 <>' 5 ; 8' : 857 : 8F8@5' <>' 7F8 : ' @B' 78@8 : 0 <>' 5 ; 8' B8 8 : 57<@' <>' : : 860 <>' 5 ; 8' : : 7? 6' <>' <:B' 4 : @C7 ' ' <EA6 0' @B0' 6 569 0' <>' <E : ' CC7B8@5 6' F8857@A' 5' V87F 550' @B' ' ' G<@B8 : 8B' <?8 : ' 5 ; 8 8' 5 ; 7@A ' ' C<E6B' @<5' ; 86G' I7@A0' Z) ; 5' @8L5' ^3 >' @9' <@8' <>' 5 ; 8' 67@I ' <>' 5 ; 7 ' > 5 6' C ; 7@' <>' C7 : CEF 5 @C8 ' ; B' =88@' <F7558B0' J ; 5' ' B7>>8 : 8@5' 5<: 9' ' ; <E6B' ; ?8' 5<' 586 6

' T T

' 6. ' 4' ' %$

Z' B') ' ECC88B8B' J8660
) 8' ; B' =88@' :8C I<@8B' RF<@A 5' 5 ; 8' J7 8' 0 <E:' F7@B '
:8 <' B7 G< 8B' 5<' !EBA8' >:<F' 5 ; 8' 8?8@5$'3

9 ! " !

Z 5' 7 ' ' 5 ; <:<EA=69' E@> 7:0 =E5' @' <:B7@ :9' CE 5<F0 5<' G: 7 8' <:' =6 F8' B8 7A@ '
MJ ; 7C ;' 7@' 5 ; 8F 86?8 ' F 9' =8' A<<B' <:' = BN' !E 5' ' 5 ; 89' 57: : @' <E5' J866' <:' 766$ 8@C8'
5 ; 8' F8' C57<@ ' :8 5' <@8' 57F 8' 55:7=E58B' 5<' 8 :@8 5@8 ' @B' 5' @<5 ; 8:' 5<' ? @759$3
$! ' F$

4 ' 5 :58B' >:<F' V8: F 55' <@' 5678' 567' <>' . E69 0' 5' 6> G 5' 0 <@' '
=:7667 @5' @B' G8:>8C569' C6<EB68 ' F<:@7@A$) 8' J8:8' 87A ; 5' 7@'
@E F=8: K :<S0 <6B' 858:' @B' ; 7 ' 5J<' <@ 0P' <:B' $ ' <EA6 0
B<J0' EB <@0Y P' @B' $ <' 8@ E:8' 58 B9' F<57<@0' <@8' 5<E:7 5' @B

P' ; 8' 5J<' 9<E@A' EAJ 6B8: ' J8:8' 5 I8@' ' G<:58: 0' =9' B8 7:8' <>' 5 ; 87:' > 5 ; 8:0' @B'
C : :78B' G:<?7 7<@ ' F G69' E>7 C78@5' ><:' 5 ; : 88' B 9 0' 7@' C $ 8' 5 ; 8' C8@5' ; <E6B' G:<?8'
F<58' 5:<E=68 <F8' 5 ; @' J8' @57C7G 58B$

_' ':8F8F=8:' G8 I7@A' =<E5' G8B8 5:7 @7 F' 5<' ' J866 I@<J@' F<E@5 7@88:' <F8'
98 : ' A<0' @B' ?8@5E:7@A' 5<' :8F : I' 5 ; 5' ' F @' J ; <' ?8: A8B' 5 ; 7:59' F768 ' B 9' F7A ; 5'
=8' C<@ 7B8:8B' ' A<<B' J 6I8:$ Z' '> 7:' J 6I8:03' ; 8' 7B0' Z' '& ' J 6I8:$3' Z') ; 5'
5 ; 8@' J<E6B' 9<E' C<@ 7B8:' ' ' J 6I7@A^3' Z) 8660 3' ; 8' :8G678B0' Z ' J766' 5866' 9<E$
<F8' 57F8' = CI' '>:78@B' @B' ' A:88B' 5<' A<' 5<' J75S8:6 @B0' =E5' ' ; <:5' 57F8' >58:D
J :B ' ; 8' J:<58' 5<' 9' ; 8' <EA ; 5' 5<' 685' F8' I@<J' 5 ; 5' ' 9<E@A' @B' B867C 58' 6 B' J '
A<7@A' J75 ; ' ; 7F' J ; <' J<E6B' @<5' =8' 8HE 0' 5<' A:8 5' 5 ; 7@A 0' 7@' > C50' ; 8' J<E6B' @<5' =8' =68'
5<' B<' F<:8' 5 ; @' >7>59' F768 ' B 9' '3' Z') ; 5' =8C F8' G>' 5 ; 8' 9<E@A' @B' B867C 58' 6 B' ^3'
Z 867?8 $3' Z' @B' J ; <' J ' 9<E:' 8L5: <:B7@ :9' >:78@B0^' 3' Z' ; :68 ' EB <@$3'
; ?8' 8?8:9' :8 <@' 5<' =8678?8' 5 ; 5' 5 ; 8' A8@568F 8@' :8>8::8B' 5<' 9 ' 8HE 0' 5<' J 6I7@A'
F<:8' 5 ; @' >7>59' F768 ' B 90' =E5' 5 ; 89" J8:8' 8LC8G57<@ 60' @<5' ' ' G8B8 5:7 @ $

*<3#59' A:976,' $; 3# 7.' J%6?476' 6' 6 ; 7%69<#5,' 839' ; 769 :5#5:' L2' 4<5'
=7A643 655#6?' .#345#6 42' 47' L5' 4<5' L594 3=345A# 7.' < 9' 4 = 5 ' 5' 839' 4<5' 7#?36 95#
36:' %53:5# 7.' 4<5' I3#42' 7.' "6?%9<=56' 8<7' 39;56:5:' 764' 0%36;' L2' 4<5' ?' :A'
7<45#,' 36:' :59;56:5:' L2' 4<5' #36:9' A%549' #7A45,' 8 4<7A4' ?A:59,' 6' & ' 9

6# 7 7 * 4 ' ! ' ' R

<@8' @ 57?8' J 6I8B' 5<A85;8:$;8' 9<E@A8 5' EAJ 6B8:' >866' 5<' F9' $; :8Ø @B' 5;8' 6 B' F :C;8B' J866Ø G:<EB' 5<' ;8' <@' 5;8' 8LG8B757<@Ø @B' ; GG9' 5<' ;<J' ;7 ' G<J8: $;8' J7@8 = A ' 6 <' >866' 5<' F9' 6<5' 5<' C ::9Ø @B' 5;:<EA;<E5' 5;8' B 9Ø >58:' 8 C;' B:7@IØ ' :8G68@7 ;8B' 5;8F' 8C:8569' J75;' J 58:Ø <' 5; 5' 5' 5;8' @8L5' ; 65' 5;89' J8:8' ><E@B' >E668:' 5; @' =8><:8' ;7 ' J ' C<@ 7B8:8B' ' A<<B' <F8@Ø @B' 675568' ;<:5' <>' F7: CE6<57 $

@' 5;8' >7: 5' B 9' J8' B7B' @<5' 7@58@B' 5<' C8@B' 5<' @9' A:8 5' ;87A;50Ø @B' J8' F<E@58BØ CC<:B7@A69Ø ?8:9'687 E:869'Ø G7CI8B' EG'5;8' 5;7@A ' J ;7C;' J8:8' 68>5' 7@' 5;8' C; G86' 5' 5;8' C;J :S 88' 5' $Q Ø @B' G:<C88B8B'5;8@C8' 6<@A' 5;8' :7BA8' C<@@8C57@A' 5;8' <:@67' J75;' 5;8' 558:;<:@$P' 5' ; 6> G 5' ' J8' ::7?8B' 5' 5;8' = 8' <>' 5;8' C5E 6' G8 IØ 5;8@' HE7558B' 5;8' :7BA8Ø @B' C6 F=8:8B' :<E@B' <F8

6<@A' G: C57C8' F B8' ;7F' E:8><<58BØ @B' 7@' 5; 5' :8 G8C5' ;8' J ' @<5' A:8 569' 7@>8:7<:' 5<' ';<:@' F<E@5 7@88:$ ' :8F8F=8:' ;7F' ' ' J866 F B8' F @' <>' F7BB68';87A;5' @B' A8Ø @875;8:' 5<E5' @<:' 5;7@Ø J75;'> C8' G68 @5K5;<EA;' A: ?8Ø @B' J75;' HE785' E@ EF7@A' F @@8: $ 65;<EA;' @' 5;6857C' F @Ø ;8' J<E6B' ; ?8' =88@' <?8:6<<I8B' 7@' 'C:<JB'ØÞ @B' 65;<EA;' ;8' ; B' B<@8' 5;8' A:8 58 5' F<E@5 7@88:7@A'>8 5' J ;7C;' ; ?8' =88@' B<@8Ø ;8' J '5;8'6 5' F @' 5<' G8 I'<>' ;7 ' <J@' B<7@A $ 7 '>:78@B' :$ B<J' J ' '9<E@A' F @' <>' @7@8588@Ø J ;<' ; B' 5;8'6<<I ' @B' F @@8: '<>' 'A:8 58:' A8$ 8' J ' ' : G7B' J 6I8:Ø ;E5' ' J ';7 '>7: 5' 8 <@' 7@' 5;8' 6G $ <:B' 4: @C7 ' ' <EA6 ' J ' =<E5' 5;8' F8' A8' ' :$ B<J$ 8' ; B' ; B' 5;8' B? @5 A8' <>' 8?8: 6' 8 <@' 7@' 5;8' 6G $ 8' J ' @7F=68' ' 'B88:Ø @B' J ' =8C<F7@A' @' 8LG8:5' F<E@5 7@88:$ .E 5' =8><:8' <E:' F8857@A' ;8' ; B' C8@B8B' 5;8' ;8:' & ;86;<:@'MJ75;' <6B' 858:' @B' .< $ (78@@7@N@ @B' 5;7 ' A ?8' F8' ';7A;' <G7@7<@' <>' ;7 ' G<J8: ' Ø><:' ' ; B' 8L F7@8B' 5; 5' 7@<E@HB@' 66' :<E@BØ ' '>8J' J88I ' =8><:8Ø @B' ; B' B8C67@8B'75 ' C8@5' <@' CC<E@5' <>'75 ' GG :8@5' B7>>7CE659$

9' G8: <@ 6' CHE 7@5 @C8' J75;' :$ EB <@' J ' ?8:9' 67A;5K 5766' ' ;<E6B' ; ?8' =88@' C<@58@5' 5<' ; ?8' G6 C8B' F9 86>' E@B8:' ;7 ' <:B8: ' 7>' ;8' ; B' C;< 8@' 5<' C6 7F' 5;8' G< 757<@' 5<' J ;7C;' ;8' J ' 8@57568B$;< 8' J ;<' I@8J' ;7F' J766' @<5' =8' E:G:7 8B' 5<' 68 :@5; 5Ø CL5> :' >:<F' B<7@A' 5;7Ø ;8' 6< 5' @<' <GG<:5E@759' <>' C<@ E657@A' 5;8' J7 ;8 ' @B' <G7@7<@ ' <>' 5;< 8' :<E@B' ;7F$) 8' B867=8: 58B' 5<A85;8:' J ;8@8?8:' 5;8:8' J ' <CC 7<@@' @B' <E:' E5;<:759' J ' :8C<A@7 8B' =9' 5;8' <5;8: $) ; 58?8:' :8 G<@ 7=76759' 5;8:8' J ' B8?<6?8B' EG<@' E $ ' :8C<668C5' J75;' 57 > C57<@' 5; 5'5;8:8' J '@<' B7>>8:8@C8' <>'<G7@7<@' ;85#+88@' E ' '5<' J ; 5' ;<E6B' =8' B<@8Ø @B' 5; 5'5;8' F< 5' G8:>8C5' ; :F<@9' 8L7 58B' =85J88@' /' <>' E ' <' 6<@A' ' JF' J8:8' 5<A85;8:$

P' ::7?8B' 5' 5;8' C; G86' 1$ ' * *' Ø 68>5' 75Ø $Q ' Ø ; 658B' 5<' 8L F7@8' :<E58' $ Ø 5 :58B' A 7@' $Q Ø @B' ::7?8B' 5' $Q ' 5' 5;8' C 7:@' F B8' =9' :$ U8@@8B9'7@' Q' M 88' G$ 1NØ F :I8B' 0 Q '>885' EG<@' 5;8' F 76$ 5<GG8B' ' F7@$;8:8Ø I:<F' 5;8

68BA8 f <@s 5< 5 ; 8s 8 58:@s > C8$) 8s J8:8s @< J s > 77B9s EG<@s 5 ; 8s F<E@D 5 7@f @B s J8:8s 5<@7 ; 8B s 5< s >7@B s 5 ; 5s G6 C8 s J ; 7C ; s >:<F s 5 ; 8s 7>>86f <:s 8?8@s >:<F s 5 ; 8s 4E:AA8@A685 C ; 8:f 6<<I8B s 8@57:869s 7FG: C57C =68f J8:8s < 8 9s 5 ; 5s J8s C<E6B s 2 s 3 2

8><:8s 5J86?8s <RC6<CIs J8s ; B s ><E@B s A<<B s G< 757<@s ><:s 5 ; 8s 58@5f 5s ; 87A ; 5s <>s 0 s >885$Ps :<Ss @B s 9<E@As 858:s J8@5s <@ 5< s 88s J ; 5s J s =<?8f 7@s <:B8:s 5< s ?8s 57F8s <@s 5 ; 8s ><66<J7@As F<:@D 7@A$; 89s CE5s C:< s 5 ; 8s ; 8 B s <>s 5 ; 8s @<J 6<G8 s J ; 7C ; s B8 C8@B8B s 5<J :B s 5 ; 8s 4E:AA8@A685 C ; 8:f @B s B7 GG8 :8B s :<E@B s C<:@8:f ; E5s ; <:569s >58:J :B s J8s J s 5 ; 8F s ; 7A ; s EGs <@s 5 ; 8s > C8f F<?7@As HE7CI69$) 8s <5 ; 8: s F B8s s <67B s G6 5><: F s ><:s 5 ; 8s 58@5s 7@s s J866 s G:<58C58B s G<5f @B s 5 ; 8@s J 5C ; 8B s 8 A8:69s ><:s 5 ; 8s :85E:@s <>s 5 ; 8s F8@$; 8s 5<@8 s J ; 7C ; s 5 ; 89s EG 85s 5<6B s 5 ; 5s 5 ; 89s J8:8s ?8:9s ; 7A ; f @B s J8s EGG< 8B s 5 ; 5s 5 ; 8s J 9s FE 5s =8s 8 9$ 5s 68@A5 ; f !E 5s =8><:8s s 1 2 (J8s J s 5 ; 8F s C<F7@As B<J@f 8?7B8@569s FEC ; s 8LC758B$ Zs) ; 5s :8s 5 ; 89s 97@Af 858:s^3 Zs &8@568F8@f 5 ; 89s 9s 75s 7 s @< A<<B$3 E5s J ; 8@s 5 ; 89s C F8s @8 :s J8s ; 8 :B s B7>>8:8@5s 5<:9$ Zs . <5 ; 7@As =E5s J ; 5s J s A<<B s f @<5s s B7>>7CE659f @<5s s 7@A68s B7>>7D CE659s s) 8s C<E6B s ; ?8s A<@8s 5< 5 ; 8s EF F75s @B s :85E:@8B s 5< B 9s 8 769 3

) 8s G 8B s 5 ; 8s :8F 7@7@As ; <E: s <>s B 967A ; 5K <F8s = I7@As 7@s 5 ; 8s E@ ; 7@8f <F8s I85C ; 7@As <:s C<668C57@Af @B s J ; 8@s 5 ; 8s E@s J8@5s B<J@f A7?7@Af s 75s B8G :58Bf s A6<:7<E s G:<F7 8s ><:s 5 ; 8s F<::<Jf J8s :85E:@8B s 5< s 5 ; 8s 58@5s 5< s :: @A8s ><:s 5 ; 8s @7A ; 5$ EB <@s F B8s 58 f s C<>>88f @B s J8s 5 ; 8@s :857:8B s 8 C ; s <@8s 5< ; 7 s =6 @I85 = Af 5 ; 8s EA s J 6B8: f <:B s : @C7 s ' <EA6 f @B s F9 86>f <CCEG97@As 5 ; 8s 58@5f 5 ; 8

<6"@67s 5< 5 ; 7 s G<7@5s J8s I8G5f J ; 8@s G< 7=68f 5< 5 ; 8s C:8 5s <>s 5 ; 8s :7BA8$; 8s A:8 58:s G :5s <>s 5 ; 8s J 9s J $ s 8LC8 7?869s 8 9f =E5s 5 ; 8:8s J8:8s '>8J s G6 C8 s J ; 8:8s 5 ; 8s L8s ; B s 5< =8s E 8B$

Ps ; E s > :s 5 ; 8s AE7B8 s B7B s @<5s <@C8s A< 5< 5 ; 8s >:<@5$ EB <@s <:s 68Bf @B s J ; 8@ @9s CE557@As J s :8HE7:8B s "J8 B7B s 75s <E: 86?8 $; 7 s J s B<@8s 5< G :8s 5 ; 8s AE7B8 f @B s 5< ; <J s 5 ; 8F s 5; 5s J8s J8:8s 5 ; <:<EA ; 69s 7@s 8 :@8 5$; 8s G<5s 5s) "; 78 ; s J8s C FG8B s J s !E 5s><E:s ; <E: R J 6I7@A>:<F s V8: F 55f @B s 7 s F :I8B s EG<@s 5 ; 8s F G K s M N$ 5s JF s !E 5s EG<@s 68s 286s J75 ; s 5 ; 8s 4E:AA8@A7 5f @B s 75 s G< 757<@s 7 s 7@B7C 58B s EG<@s 5 ; 8s 8@A: ?7@As > C7@As G$ Q s =9s s 675568s C7:CE6 :s J ; 758s G<5f 7@s s 67@8s J75 ; s 5 ; 8s J<:B s

<5;8: 'P:8F 7@7@A =9 G:8>8:8@C8 <E5 7B8$ <@A >58:' BE I' 5;8 C67>> ' =<?8 8C;<8B J75;' <E:' 6 EA;58:' @B J75;' 5;8 <@A ' <> 5=8 AE7B8 <:' J8 J8:8 ; GG9 5; 5 @7A;5 7@ C FG @B >8 :8B @< 8?76$) 8 8F=68B 5<A85;8:' <E5 7B8 5;8 58@5 =8><:8 B J@ <@ 5;8 F<:@7@A <> 5;8 25; @B 5 :58B B7:8C569 75 J ' 67A;5 8@<EA;' 5< F<?8$ <E@A 858:' C F8 <@ J75;' E ' ' AE7B80 @B ;7 ' =:<5;8:' :85E:@8B 5< V8:F 55$P) 8 ><66<J8B 5;8 :<E58 J;7C;' ; B =88@ 5 I8@ <@ 5;8 G:8?7<E ' B 9 @B 7@ ' >8J' F7@E58 ' 5E:@8B 5;8 :7= J;7C;' ; B 7@58:C8G58B 5;8 ?78J' <> 5;8 8 58:@ > C8 >:<F' <E:' 58@5 $G6 5><:F$;8 J;<68 <> 5;7 ' A:8 5 6<G8 J ' @<J' :8?8 68B :7 7@A ><:' ' >885 67I8 ' ;EA8 @ 5E: 6 5 7:C 8$"XP <F8G :5 ' J8:8 F<:80 @B <5;8: ' J8:8 68 0 8 90 =E5 J8 J8:8 @<5 <@C8 =:<EA;5 5< ' ; 65 =9 @9 8:7<E ' 7FG8B7F8@50 ><:' J;8@ @ <= 5:EC57<@ J ' F85 7@ >:<@5 75 C<E6B 6J 9 '=8 5E:@8B 5<5;8 :7A;5 <:'5<5;8 68>5$ 4<:'5;8 A:8 58:' G :5 <>5;8 J 9 5;8:8 J 0 7@B88B0 @< <CC 7<@ ><:'5;8 :<G80 @B <F857F8 ' EB <@ 68B0 <F857F8 ' F9 86> 5 $Q ' J8 ; B 55 7@8B ' ;87A;5 <> Q0 ' >8850 @B ; 658B ><:' ; 6> @ ;<E:C J8 5;8@ C<@57@E8B 5;8 C8@5 J75;<E5 ' =:8 I' E@576 $ 0 J;8@ J8 5<GG8B ><:' ' F7@E58 0 5 ' ;87A;5 <> 20 ' >885$ J7C8 J8 5:EC I' 5;8 $ $:7BA80 @B ><66<J8B 75 ><:' <F8 675568 B7 5 @C80 K5< @< B? @5 A80 ><:' 75 J ' E E 669 F<:8 :<558@ @B 588G0 @B 6J 9 ' F<:8 B7>>7CE65 5; @ 5;8 > C8$d 5766 J8 I8G5 @8 :' 5< 750 68 5 5<@8 ' G8:C; @C8 F7A;5 > 66$ ff

P 5') ' <:7A7@ 669 7@58@B8B 5< 68 ?8 =<5;' <> 5;8 9<E@A F8@=8;7@B$) 8 ><E@B 75 B7>>7CE65 5< B7?7B8 5;8 ><B0 @B < 5;8 @8 J ' :: @A8F8@5 J ' F B8$

5 ' 88 GG$ Q $

5 4<:'5: CI0 88 5;8 6<J8:' <> 5;8 <E567@8 ' > C7@A G$ Q $

d 88 :8F :I ' <@ :858 ' @B > C8 ' <@ GG$ Q $;8:8 7 ' ?8:9 675568 5< C;<< 8 =85J88@ 7@ 5;8 :858 ' 68 B7@A >:<F' 5;8 EF F75 5<J :B ' 5;8 <:@67 M%$ $:7BA8N @B 5<J :B ' 5;8 <6 BE 7<@ M $) $:7BA8N$ <5;' :8 ! AA8B0 8:7 58B :7BA8 0 J;7C;' @9 8LG8:78@C8B C67F=8:' J<E6B J7667@A69 ?<7B 7>' ;8 C<E6B >7@B @<5;8:' :<E58$ @5;8 @<:5;8:@ MV8:F 55N 7B8 5;8 8 58:@ > C8 >><:B ' @<5;8:' :<E580 <:' @9 @EF=8:' <> :<E58 0 7@C8 5;8:8 7 ' ; :B6@9 ' G :5 <>75 J ;7C;' C @@<5 =8 5: ?8: 8B ' @5;8 <E5;8:@ M :876N 7B8 5;8 :7BA8 6<@80 A8@8: 669 G8 I7@A0 C @ =8><66<J8B 0 @B J ;8@75 =8C<F8 ' 7FG: C57C =680 @B 5;8 C67F=8:' 7 ' ><:C8B 5< =8 :' B<J@ 5< 5;8 :7A;5 <:'5<5;8 68>50 5;8 J<:I' 7 ' <>5;8 F< 5 B7>>7CB5 C; : C58:$

' (879 >8J' 5<@8 ' >866 BE:7@A' 5;8 5J< B !" ' ' J '<@ 5;8 F<E@5 7@0 @B @<@8 C F8

) 8' ; B' @<J' ::7?8B' 5' 5;8'><<5' <>' 5; 5' G :5' J;7C;0' >:<F' 5;8'
75>86=8:A' <!:' >:<F' V8:F 550' 88F ' G8:G8@B7CE6 :' <:' <?8:; @A7@A0'
@B' C<E6B' @<' 6<@A8:' C<@57@E8' EG<@' 5;8' 8 58:@' 7B8$ 4<:' '675568'
B7 5 @C8' J8' C8@B8B' ;9' @<J' EG<@' 5;8' :B58P K 5; 5' 7 0' 5;8' :7BA8'
K B8 C8@B7@A' 5<J :B ' V8:F 550' @B' 5;8@0' ;9' C<F F<@' C<@ 8@50'
5E:@8B' <?8:' 5<' 5;+':7A;50' <:' 5<' 5;8' @<:5;8:@' 7B8$ 8><:8' B<7@A' <0'
J8' F B8' ' C; @A8' 7@' 5;8' <:B8:' <>' C8@5$:<S' J8@5' >7: 50' '
><66<J8B0' EB <@' C F8' 5;7:B'0 B<J' @B' <6B' 858:' J8:8' 6 5$
Z'%<J03' 7B' :<S0' ' ;8' 68B' <>0'Z'@<J' ><:' <F85;7@A' 65<A85;8:'
B7>>8:8@5$3' ;8') <:I' =8C F8' B7>iCE650' @B' :8HE7:8B' C E57<@$ @'
<F8' G6 C8 ' 5;8:8' J ' 675568' 5<' ;<6B0' @B' 75' J ' B8 7: =68' 5; 5'
5;< 8' ;<E6B' =8' 7@' -:<@5' J;<' J8:8' 68 5' 67I869' 5<' 67G$;8'
A8@8: 6' 6<G8' <>' 5;8' F<E@5 7@' 5'5;7 ' G :5' J ' '5; @'2 `0' @B'
@<J'; B' CCEFE6 58B' 7@0' @B' ; B'>7668B'EG0' 5;8' 7@58: 57C8 ' <>' 5;8'
:<CI > C80' 68 ?7@A' <@69' <CC 7<@ 6' >: AF8@5 ' G:<!8C57@A' ;8:8' @B'
5;8:8$;8 8' J8:8' 5' 57F8 ' C<?8:8B' J75;' ' 5;7@' >76F' <>' 7C80'
G:<BEC8B' >:<F' 5;8' F8657@A' @B' :8>:88S7@A' <>' 5;8' @<J$ 5' J '
5;8' C<E@58:G :50' <@' ' F 66' C 680' <>' 5;8' EGG8:' 1 ' >885' <>' 5;8'
<7@58' B8 ' C:7@ 0K <@69' 5;8:8' J ' 5;7 ' F 58:7 6' B7>>8:8@C80' 5;8'
> C8' <>' 5;8' C:7@ ' J ' =<E50' <:' 8LC88B8B0' @' @A68' <>' `0' @B'5;8'
558:;<:@' > C8' J ' 68 ' 5; @' 2 `$Y>P' 5' J ' ' G6 C8' <?8:' J;7C;

@8 :'E $ 5;8:' J;<' ; ?8'><66<J8B'5;8' F8':<E58'; ?8'@<5'=88@' <'><:5E@ 58'0 5;89'
F 9'@<50' G8:; G 0' ; ?8'5 I8@'5;8' F8'G:8C E57<@ $ 5'7 ' '@<58J<:5;9'> C50' 5; 5'5;8'
6 58: 6' F<: 7@8' <>'5;8'68>5' = @I' <>'5;8'4E:AA8@A685 <>78:'7 ' C :C869'6 :A8:'5; @'5; 5'<>'
5;8':7A;5' = @I0' 65;<EA;'5;8'><:F8:'8C87?8 ' 66' 5;8'B8=:7 ' 5; 5' > 66 '>:<F'5;8' 2 '
>885'<>'C67>> ' J;7C;'><:F'5;8'8 58:@' 7B8'<>'5;8' 558:;<:@0' J;76 5'5;8'6 558:'7 '>8B'=9'
G8:>8C569'7@ 7A@7>7C @5' 6<G8 $ %875;8:'<>'5;8 8'F<: 7@8 '7 '6 :A8$;7 '7 ' 5:<@A'8?7D
B8@C8'5; 5' 5< 8 'B<' '> 66'5<' @9'A:8 5'8L58@5'>:<F'5;8' 8 58:@'> C8$;8'7@J :B'B7G'
<>'5;8'=8B ':85 7@ ' 5;8'B85:75E ' 7@'G6 C8$ 8@C8'5;8' 8 58:@' > C8' GG8 :0' J;8@'<@8'
7 ' EG<@'750'5<'=8'E@B8:A<7@A'F<:8': G7B'B7 7@58A: 57<@'5; @'5;8'<5;8:' 7B8 '0'7@':8 6759'0'
5;8' F @568'<>':E7@' G :8 ' 5;8' F<E@5 7@'>:<F' > :5;8:' J 58$ /G<@'5;8' <E5;8:@' 7B80'
:<<I '> /' '5;89' :8':8@5'<>>0'Z'8 C;'B 9R'J<:I'7 'C68 :8B' J 93'8?8:9'B 9'0 @B';8@C8'
5;8'> C8 ' @B':7BA8 ' :8'68>5'@ I8B0' @B'8LG< 8B'5<'>:8 ;' 55 CI $

P' ;8' @<J' 88@' 7@' 5;8'8@A: ?7@A'> C7@A'G$ Q 0' ; 6> @ 7@<;' =86<J'5;8' EF F750'
@B' '675568'5<'75 '68>5$

_' ;7 'G :5' J '68 ' 588G69'7@C67@8B'5; @'5;8'J;<68'<>'5;8'8 58:@'> C8$

6# 7 7 *)1 (' ' 4 ' ! *) :

@9' > 7:' F<E@5 7@88:' F7A;5' G ' 7@' >8590 @B' :$ EB <@' C8@B8B' 5;7 ' G :50 @B0 ' > :' ' ' I@<J0 5;8' 8@57:8' F<E@5 7@0 J75;<E5' ; ?7@A' 5;8' 67A;58 5' 7 5 @C8' :8@B8:8B' 5<' ;7F' EG<@' @9' <CC 7<@$ <F857F8 0 >58:' ' ; B' 5 I8@' ' ; @B' >:<F' :<S0 <:' :8C87?8B' ' GE660 ' 5E:@8B' 5<' <>>8:' 5;8' F8' 5<' EB <@' 0 =E5' ;8' 7@? :7 =69' B8C;@8B0 97@A' 75' J ' @<5' @8C8 :9$:$ B<J0 ;<J8?8:0 J ' @<5' CCE 5<F8B' 5<' 5;7 ' I7@B' <>' J<:I0 @B' :8HE7:8B' C<@57@E 6 7 5 @C8$ 5' 7 ' <@69' > 7:' 5<' 9' 5; 5' 5;8' B7>>7CE659' J;7C;';8' ><E@B' 5' 5;7 ' G :5' :< 8' 7F G69' @B' 8@57:869' >:<F' J @5' <>' 8LG8:78@C8$

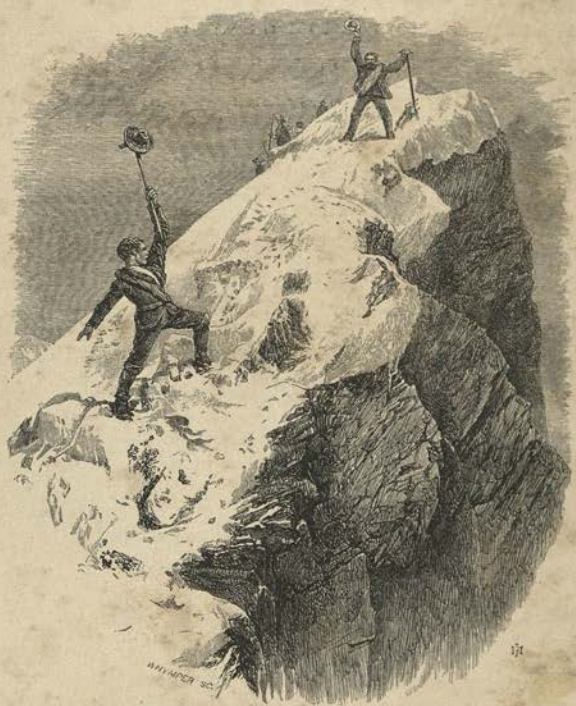
;7 ' <675 :9' B7>>7CE65' G :5' J '<>' @<' A:8 5' 8L58@5$P') 8' =<:8' J 9' <?8:' 75' 5' >7: 50 @8 :69' ;<:7S<@5 6690 ><:' ' B7 5 @C8' <>' =<E5' 2 ' >8850 5;8@' C8@B8B' B7:8C569' 5<J :B ' 5;8' EF F75' ><:' =<E5' ' >8850 @B' 5;8@' B<E=68B' = CI' 5<' 5;8' :7BA8' J;7C;' B8 C8@B ' 5<J :B ' V8:F 55$ ' 6<@A' 5:7B8' :<E@B' ' : 5;8:' J I J :B' C<:@8:' =:<EA;5' E ' 5<' @<J'<@C8' F<:8$;8' 6 5' B<E=5' ? @7 ;8B' ;8' 558:;<:@' J '<E:' ' %<5;7@A'=E5' Q '>885'<>' 8 9' @<J':8F 7@8B' 5<' =8' E:F<E@58B

<E' F E 5' @<J'C @9' 9<E:' 5;<EA;5 '= CI' 5<' 5;8' 8?8@' 5 67 @ ' J;<' 5 :58B' >:<F' :876 <@' 5;8' 5;' <>' .E69$ 4<E:' B 9 ' ; B' G 8B' 7@C8' 5;87:' B8G :5E:80 @B' J8' J8:8' 5<:F8@58B' J75;' @L7859' 68 5' 5;89' ;<E6B' ::7?8' <@' 5;8' 5<G' =8><:8' E ' /' 5;8' J 9' EG' J8' ; B' 5 6I8B' <>' 5;8F0 @B' F @9' > 6 8' 6 :F ' <>' Z F8@' <@' 5;8' E F F753; B' =88@' : 7 8B$;8' ;7A;8:' J8' :< 80 5;8' F<:8' 7@58@ 8' =8C F8' 5;8' 8LC758F8@5$P') ; 5' 7>' J8' ;<E6B' =8' =8 58@' 5' 5;8' 6 5' F<F8@5'^ ;8' 6<G8' 8 8B' <>0 5' 68@A5;' J8' C<E6B' =8' B85 C;8B0 @B' :<S' @B' 0 B ;7@A' J 90 : @' ' @8CI @B @8CI' : C80 J;7C;' 8@B8B' 7@' 'B8 B' ;8 5$ 5' $2 ' '5;8' J<:6B' J ' 5' <E:' >8850 @B' 5;8' 558:;<:@' J ' C<@HE8:8B$ E:: ;' %<5' ' ><<5 58G' <E6B' =8' 88@$

5' J ' @<5' 985' C8:5 7@' 5; 5' J8' ; B' @<5' =88@' =8 58@$;8' EF F75' <>' 5;8' 558:;<:@' J ' ><:F8B' <>' ' :EB869' 68?86' :7BA80

P' ' ; ?8' E<' F8F<: @BEF' <>' 5;8' 57F8' 5; 5' 75' <CCEG78B$ 5' F E 5' ; ?8' 5 I8@' =<E5' @';<7E ' @B' '; 6>$

about 350 feet long,* and the Italians might have been at its farther extremity. I hastened to the southern end, scanning the snow right and left eagerly. Hurrah! again; it was untrodden. "Where were the men?" I peered over the cliff, half doubting, half expectant. I saw them immediately—mere dots on the ridge,



"CROZ! CROZ!! COME HERE!"

at an immense distance below. Up went my arms and my hat.

* The highest points are towards the two ends. In 1865 the northern end was slightly higher than the southern one. In bygone years Carrel and I often suggested to each other that we might one day arrive upon the top, and find ourselves cut off from the very highest point by a notch in the summit-ridge which is seen from the Theodule and from Breil (marked D on the outline on p. 128). This notch is very conspicuous from below, but when one is actually upon the summit it is hardly noticed, and it can be passed without the least difficulty.

Z :<S' :<S' ' C<F8' ;8:8' 3 Z) ;8:8' :8' 5;89(' <@ 78E:'^3
Z ;8:8(' B<@R5' 9<E' 88' 5;8F(' B<J@' 5;8:8'^3 Z 66' 5;8' O2
5;89' :8' 6<J' B<J@$3 Z :<S(' J8' F E 5' F I8' 5;< 8' >866<J ' ;8 :' E $3
) 8' 98668B' E@576' J8' J8:8' ;< : 8$;8' 5 67 @ ' 88F8B' 5<' :8A :B' E '
K J8' C<7BB' @<5' =8' C8:5 7@$ Z :<S(' J8' 2 ' F I8' 5;8F' ;8 :' E ' (
5;89' $ ' ;8 :' E 3 ' 87S8B' ' =6<C I' <>' :<C I' @B' ;E:68B' 75' B<J@(
@B' C 668B' EG<@' F9' C<FG @7<@(' 7@' 5;8' @ F8' <>' >:78@B ;7G(' 5<' B<
5;8' F8$) 8' B:<?8' <E:' 57C I ' 7@(' @B' G:7S8B' J 9' 5;8' C: A (' @B'
<<@' ' 5<::8@5' <>' 5<@8 ' G<E:8B' B<J@' 5;8' C67>> $;8:8' J ' @<
F7 5 I8' =<E5' 75' 5;7 ' 57F8$;8' 5 67 @ ' 5E:@8B' @B' >68B$P

57/(' J<E6B' 5;5' 5;8' 68 B8:' <>' 5;5' G :59' C<E6B' ; ?8' 5<<B'
J75;' E ' 5' 5;5' F<F8@5(' ><:' <E:' ?7C5<:7<E ' ;<E5 ' C<@?898B' 5<' ;7F'
5;8' B7 GG<7@5F8@5' <>' 5;8' F=757<@' <>' ' 67>857F8$ 8' J ' $ ' F @(
<>' 66' 5;< 8' J ;<' 558FG58B' 5;8' C8@5' <>' 5;8' 558:;<:@(' J ;<' F< 5'
B8 8:?8B' 5<' =8' 5;8' >7: 5' EG<@' 75 ' EF F75$ 8' J ' 5;8' >7: 5' 5<'
B<E=5' 75 ' 7@ CC8 7=76759(' @B' ;8' J ' 5;8' <@69' F @' J ;<' G8: 7 58B' 7@'
=8678?7@A' 5;5' 75 ' C8@5' J<E6B' =8' CC<FG67 ;8B$ 5' J ' 5;8' 7F'
<>' ;7 ' 67>8' 5<' F I8' 5;8' C8@5' >:<F' 5;8' 7B8' <>' 5 69(' ><:' 5;8' ;<@<E:'
<>' ;7 ' @ 57?8' ? 6689$ 4<:' ' 57F8' ;8' ; B' 5;8' A F8' 7@' ;7 ' ; @B ' [
;8' G6 98B' 75' ' ;8' 5;<EA;5' =8 5(=E5' ;8' F B8' '> 6 8' F<?8(@B' ;8'
6< 5' 75$ 7F8 ' ; ?8' C; @A8B' J75;' ::86$ 7 ' EG:8F C9' 7 ' HE8 D
57<@8B' 7@' 5;8' ((' <E:@ @C;8' (@8J' F8@' ; ?8' :7 8@' (@B' ;8' 7 Y@<'
6<@A8:' :8C<A@7 8B' ' $ ' C; 8E:' =<?8' /' <5;8: ' [=E5' <' 6<@A' '
;8' :8F 7@ ' 5;8' F @' 5; 5' ;8' 7 ' 5< B 9(' 75' J766' @<5' =8' 8 9' 5<' >7@B' ;7 '
EG8:7<:$

;8' <5;8: ' ; B' ::7?8B(' <' J8' J8@5' = CI' 5<' 5;8' @<:5;8:@' 8@B'
<>' 5;8' :7BA8$:<S' @<J' 5<<I' 5;8' 58@5 G<68(' @B' G6 @58B' 75' 7@' 5;8'
;7A;8 5' @<J$ Z 8 (3' J8' 7B(' Z 5;8:8' 7 ' 5;8' >6 A 5 >>(' =E5' J;8:8'
7 ' 5;8' >6 A'^3 Z 8:8' 75' 7 (3' ;8' @ J8:8B(' GE667@A' <>' ;7 ' =6<E 8' @B

P' ' ; ?8' 68 :@5' 7@C8' >:<F' .$ $' ::86' 5; 5' 5;89' ;8 :B' <E:' >7: 5' C:78 $;89'
J8:8' 5;8@' EG<@' 5;8' <E5; J8 5' :7BA8(' C6< 8' 5<' 5;8' c : ? 58(R @B' 9 '$2 ' '
& & '>885' =86<J' E '(<:('5;8' C:<J'>678 (' 5' 'B7 5 @C8' <>' =<E5' <@8 5;7:B' <>' ' F768$
5' 5' <E:' B8G :5E:8' 5;8' F8@' J8:8' C<@>7B8@5' 5; 5' 5;8' 8@5') <E6B' ;8' F B8(' @B'
5<<I' <@8' <>' 5;8' G<68 ' <E5' <>' 5;8' 58@5$ ' G:<58 58B' 5; 5' 75' J ' 58F G57@A' :<?7B8@C8' (
5;89' 5<<I' 5;8' G<68(' @8?8:5;868 $

fixing it to the stick. It made a poor flag, and there was no wind to float it out, yet it was seen all around. They saw it at Zermatt—at the Riffel—in the Val Tournanche. At Breil, the watchers cried, "Victory is ours!" They raised 'bravos' for Carrel, and 'vivas' for Italy, and hastened to put themselves *en fête*. On the

THE SUMMIT OF THE MATTERHORN IN 1865 (NORTHERN END).

morrow they were undeceived. "All was changed; the explorers returned sad—cast down—disheartened—confounded—gloomy." "It is true," said the men. "We saw them ourselves—they hurled stones at us! The old traditions *are* true,—there are spirits on the top of the Matterhorn!"*

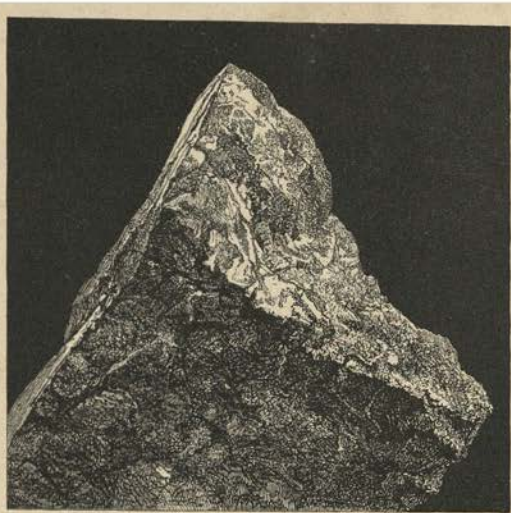
* Signor Giordano was naturally disappointed at the result, and wished the men to start again. *They all refused to do so, with the exception of Jean-Antoine.* Upon the 16th of July he set out again with three others, and upon the 17th gained the

G 6' G8 I '<>' 5;8' 6G ' J ' ;7BB8@$P' ' 88' 5;8F'C68 :69'@<J K5;8' A:8 5' 7@@8:' C7:C68 ' <>' A7 @5 0' ; CI8B' =9' 5;8' : @A8 0' C; 7@ 0' @B'
! & ' :7: 5' C F8' 5;8' ' 8@5' 6 @C;80' ;< :9' @B'A: @B'0 5;8' & ' =86;<:@' @B'G<7@58B' <5; ;<:@'0 @B'5;8@' 5;8'G88:68 ') 87 ;<:@[5;8'5<J8:7@A' 7 C; =86;B:@8:0'>6 @I8B'=9'5;8' / 687@;<:@0' 5: ;6' ;<:@0' @B' 7FG>7 C; ;<:@0 5;8@' <@58' < K J75;' 75 ' F @9' G75S8 K5;8' 9 I F F' @B'5;8' :875;<:@$ 8;7@B'J8:8'5;8' 8:D @8 8' =8:6 @B0'A<?8:@8B'=9'5;8' 7@ 58: :;<:@'0 5;8' 7FG6<@' @B' 5$' &<5; :B'A:<EG '0 5;8' '7 A: S7 ' @B'5;8' :5868:$ <J :B ' 5;8' <E5;' J8' 6<<I8B'B<J@'5<' ;7? <'<@'5;8'G6 7@'<>' 78BF<@50' @B' > :' =89<@B$;8' (7 < K <@8' ;E@B:8B' F768 ' J 9K 88F8B'C6< 8' EG<@'E '0 5;8' :757F8' 6G K<@8' ;E@B:8B' @B' 5;7:59' FB8 ' B7 D 5 @5K J8:8'>:88' >:<F' ; S8$;8@' C F8' F9' >7: 5' 6<?8K5;8' 86 ' ?<EL'0 5;8' C:7@ ' @B'5;8' 87!8'0 5;8'C6E 58: ' <>'5;8' &: 7 @ '0 @B' 6 569'0 7@'5;8' J8 50' A<:A8<E ' 7@'5;8'>E66' E@ A;50' :< 8'5;8' F<@ :C;' <>' 66K <@5' 6 @C$ 8@'5;<E @B'>885'=8@8 5;'E ' J8:8'5;8'A:88@ >786B ' <>' V8:F 550' B<558B' J75;' C; 685 0' >:<F' J ;7C;'=6E8' F<I8':< 8' 6 S769$ 7A;5' 5;<E @B' >885' =86<J0' <@'5;8' <5;8:' 7B80' J8:8' 5;8' G 5E:8 ' <>' :876' ;8:8' J8:8' ><:8 5 ' =6 CI' @B' A6<<F90' @B' F8 B<J ' =:7A;5' @B' 67?869'0 =<E@B7@A' J 58:> 66 ' @B' 5: @HE76 6 I8 '0 >8:5768' 6 @B ' @B' ? A8' J 58 '0 E@@9'G6 7@ ' @B' >:7A7B' 26 ' ;8:8' J8:8'5;8' F< 5' :EAA8B' ><: F 0' @B'5;8' F< 5'A: C8D >E6' <E5 @8 K =<6B0' G8:G8@B7CE6 :' C67>> 0' @B' A8@568'0 E@BE6 57@A' 6<G8 '0 :<CI9'F<E@5 7@ ' @B' @<J9'F<E@5 7@ 0' <F=:8' @B' <68F@0' <:'A 558:7@A' @B' J;758'0 J75;' J K5E::85 K+G7@@ C68 KG9: F7B ' K B<F8 KC<@8 K @B' G7:8 ' ' ;8:8' J ' 8?8:9'C<F=7@ 57<@'5; 5' 5;8' J<:6B'C @'A7?80' @B' 8?8:9'C<@5: 5'5; 5'5;8' ;8 :5' C<E6B'B8 7:8$
) 8':8F 7@8B'<@'5;8' EF F75'><:'<@8' ;<E:K

Z' @8'C:<JB8B'67<E:'<>'A6<:7<E '67>8$3

5' G 8B' J 9' 5<<' HE7CI69'0 @B' J+8 =8A @'5<' G:8G :8' ><:'5;8' B8 C8@5$

P' 5'7 ' F< 5' E@E E 6' 5<' 88'5;8' <E5;8:@' ; 6>' <>'5;8'G @<: F 'E@C6<EB8B$ ' ;E@B:8B' C8@5 ' F$ 9' ;8' F B8'=8><:8'5;7 ' (766'=8'5;8'C 8' A 7@$



THE ACTUAL SUMMIT OF THE MATTERHORN IN 1865.

CHAPTER XXII.

DESCENT OF THE MATTERHORN.*

HUDSON and I again consulted as to the best and safest arrangement of the party. We agreed that it would be best for Croz to go first,† and Hadow second ; Hudson, who was almost equal to a guide in sureness of foot, wished to be third ; Lord F. Douglas was placed next, and old Peter, the strongest of the remainder, after him. I suggested to Hudson that we should attach a rope to the rocks on our arrival at the difficult bit, and hold it as we descended, as an additional protection. He approved the idea, but it was not definitely settled that it should be done. The party was being

* The substance of Chapter XXII. appeared in a letter in the *Times*, August 8, 1865. A few paragraphs have now been added, and a few corrections have been made. The former will help to make clear that which was obscure in the original account, and the latter are, mostly, unimportant.

† If the members of the party had been more equally efficient, Croz would have been placed *last*.

7 77A8B' 7@' 5;8' =<?8' <:B8:' J;76 5' ' J ' I85C;7@A' 5;8' EFF750
@B' 5;89' ; B' >7@7 ;8B0 @B' J8:8' J 757@A' ><:' F8' 5<' =8' 578B' 7@' 67@80
J;8@' <F8' <@8' :8F8F=8:8B' 5; 5' <E:' @ F8 ' ; B' @<5 =88@' 68>5' 7@' '
=<5568$;89' :8HE8 58B' F8' 5<' J:758' 5;8F' B<J@0 @B' F<?8B' <>'
J+;768 75' J '=87@A' B<@8$

' >8J' F7@E58 ' >58:J :B ' ' 578B' F9 86>' 5<' 9<E@A' 858:0 : @
B<J@' >58:' 5;8' <5;8: 0 @B' C EA;5' 5;8F' !E 5' ' 5;89' J8:8' C<FD
F8@C7@A' 5;8' B8 C8@5' <>' 5;8' B7>>7CE65' G :5$P' &:8 5' C :8' J '=87@A'
5 I8@$ @69' <@8' F @' J ' F<?7@A' 5' '57F8'0 J;8@' ;8' J '>7:F69'
G6 @58B' 5;8' @8L5' B? @C8B0 @B' <' <@$;89' ; B' @<50 ;<J8?8:0
55 C;8B' 5;8' BB757<@ 6' :<G8' 5<' :<CI 0 @B' @<5;7@A' J ' 7B' =<E5
75$;8' EAA8 57<@' J '@<5' F B8' ><:' F9' <J@' I80 @B' ' F' @<5
E:8' 5; 5' 75' 8?8@' <CCE::8B' 5<' F8' A 7@$ 4<:' <F8'675568' B7 5 @C8'
J8' 5J<' ><66<J8B' 5;8' <5;8: 0 B85 C;8B' >:<F' 5;8F0 @B' ;<E6B' ; ?8'
C<@57@E8B' <' ; B' @<5' <:B' 4$ ' <EA6 ' I8B' F80 =<E5' 1 2 (5<'
578' <@' 5<' <6B' 858:0 ' ;8' >8 :8B0 ;8' 7B0 5; 5' EAJ 6B8:' J<E6B'
@<5' ;8' K '5<' ;<6B' ;7 ' A:<E@B' 7>' ' 67G' <CCE::8B$

'>8J' F7@E58 '6 58:0 ' ; :G 898B' 6 B' : @' 7@5<' 5;8' <@58' < '
;<5860' 5<' 8768:0 97@A' 5; 5' ;8' ; B' 88@' @' ? 6 @C;8' > 66' >:<F' 5;8'
EFF75' <>' 5;8' 558:;<:@' <@' 5<' 5;8' 558:;<:@A685 C;8:$;8' ;<9'
J ' :8G:<?8B' ><:' 58667@A' 7B68' 5<:78 '0 ;8')" ' :7A;50 @8?8:5;868 0
@B' 5;7 ' 5 ' J; 5' ;8' J$

7C;86 :<S' ; B' 6 7B' 7B8' ;7 ' L80 @B' 7@' <:B8:' 5<' A7?8' :$
B<J' A:8 58:' 8CE:759 0 J ' = <6E5869' 5 I7@A' ;<6B' <>' ;7 ' 68A 0 @B'
GE557@A' ;7 ' >8850 <@8' =9' <@80 7@5<' 5;87:' G:<G8:' G< 757<@ $ ' '> :' '
' I@<J0 @<' <@8' J ' C5E 669' B8 C8@B7@A$ ' C @>><5' G8 I' J75;'
C8:5 7@590 =8C E 8' 5;8' 5J<' 68 B7@A' F8@' ?8:8' G :57 669' ;7BB8@' >:<F'
F9' 7A;5' =9' @' 7@58:?8@7@A' F ' <>' :<CI0 =E5' 75' 7 ' F9' =8;8>0 >:<F

P' '8 C6 7587' EG<@' GG$ $

5' U<5' 5' 66' @' E@E E 6' G:<C88B7@A0 8?8@' =85J88@' =<F' F<E@5 7@88: $ ' J7 ;'
5<' C<@?89' 5;8' 7FG:8 7<@' 5; 5' :<S' J ' E 7@A' 66' G 7@ 0 : 5;8:' 5; @' 5<' 7@B7C 58'
8L5:8F8' 7@ =76759' <@' 5;8' G :5' <>' :$ B<J$;8' 7@ 8:57<@' <>' 5;8' J<:B' ¢ = <6E5869' R
F I8 ' 5;8' G A80 G8:; G 0 : 5;8:' F=7AE<E $' ' :85 7@' 75' @<J0 7@' <:B8:' 5<' <>8:' 5;8'
=<?8' 8LG6 @ 57<@$

5;8 F<?8F8@5 <>5;87: ;<E6B8: 0 5; 5 :<S0 ; ?7@A B<@8 ; ?8 7B0 J 7@5;8 C5 <>5E:@7@A:<E@B 5<A< B<J@ 58G<:5J<;7F D 86>0 5 5;7 F<F8@5 :$ B<J 67GG8B0 >866 A 7@ 5 ;7F0 @B I@<CI8B ;7F<?8:$;8 :B<@8 5 :568B 8LC6 F 57<@ >:<F :<S0 5;8@ J ;7F @B :$ 6 B<J >697@A B<J@J :B 0 7@ @<5;8:F<F8@5 EB <@ J B: AA8B>:<F;7 58G 0 @B <:B 4$ '<EA6 7F F8B7 5869 >58:;7F$P 66 5;7 J 5;8 J<:I <> F<F8@5$F F8B7 5869 J8 ;8 :B :<SR 8LC6 F 57<@0 <6B 858:@B G6 @58B<E: 86?8 >7:F69 5;8 :<CI J<E6B G8:F75 7>5;8 :<G8 J 5 E5 =85J88@ E 0 @B 5;8 !8:I C F8 <@ E =<5; <@<@8 F @$) 8 ;86B0 =E5 5;8 :<G8 =:<I8 F7BJ 9 =85J88@ EAJ 6B8:@B <:B 4: @C7 '<EA6 $ 4<: >8J 8C<@B J8 J<E:E@><:5E@ 58C<FD G @7<@ 67B7@A B<J@J :B <@5;87: ; CI 0 @B G:8 B7@A<E5;87:

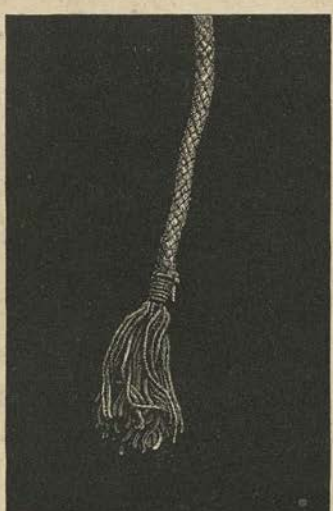
P 5;8F<F8@5<>5;8 CC7B8@50 :<S B<J0 @B EB <@0 J8:8 66 C6< 8 5<A85;8:$ 85J88@ EB <@ @B <:B 4$ '<EA6 5;8 :<G8 J 66 =E5 5 E50 @B 5;8 F8 =85J88@ 66 5;8 <5;8: J ;< J8:8 3 :<S J 5 @B7@A =9 5;8 7B8 <> 5<<I J;7C;' >><:B8B A<<B;<6B0 @B 7>;8; B =88@ J :80 <:; B E G8C58B0 5; 5 @95;7@A J =<E5 5< <CCE:0 ;8 F7A;5 @B J<E6B ; ?8 A:7GG8B 750 @B J<E6B; ?8 G:8?8@58B @9 F7 C;78>$ 8 J 5 I8@ 5<5 669 =9 E:G:7 8$:$ B<J 67GG8B <>; 7 >885 <@5< ;7 = CI0 ;7 >885 5:EC I :<S 7@5;8 F 66 <>5;8 = CI0 @B I@<CI8B ;7F :7A;5 <?8:0 ;8 B >7: 5$:<SR L8 J <E5 <> ;7 :8 C;0 @B J75;<E5 75 ;8 F @ A8B5< A85 B 678 B EGG8:F< 5 =8><:8 ;8 B7 GG8 :8B >:<F <E:7A;5$ > 75 ; B =88@ 7@ ;7 ; @B ; ?8 @< B<E=5 5; 5 ;8 J<E6B ; ?8 5<GG8B ;7F 86> @B :$ B<J$

:$ B<J0 5 5;8F<F8@5 <> 5;8 67G0 J @<5 <CCEG97@A = B G< 757<@$ 8 C<E6B ; ?8 F<?8B 875;8:EG <:B<J@0 @B C<E6B 5<EC;J75;;7 ; @B 5;8 :<CI <> J;7C; ; ?8 G<I8@$ EB <@ J @<5 <J866 G6 C8B0 =E5;8 ; B 67=8:59 <> F<57<@$;8 :<G8 J @<5 5 E5 >:<F ;7F 5< B<J0 @B 5;8J< F8@ >866 58@ <:5J"86?8 >885 =8><:8 5;8 !8:I C F8 EG<@ ;7F$ <:B 4$ '<EA6 J @<5 > ?<E: =69 G6 C8B0 @B C<E6B 0875;8: F<?8 EG @<:B<J@$ 6B 858:J >7:F69 G6 @58B0 @B 5<<B !E 5 =8@8 5; 6 :A8 :<CI J;7C; ;8 ;EAA8B J75; =<5; :F $ 8@58:7@5<5;8 8 B85 76 5< F I8 75 F<:8 GG :8@5 5; 5 5;8 F<F8@5 <>5;8 CC7B8@5 J @<5 =9 @9 F8 @ 8LC8 7?869 5:97@A$) 8 J8:8 C<FG866B 5< G <?8:5;8 8L C5 G<5 J;8:8 5;8 67G <CCE::8B0 @B J8><E@BK 8?8@ J75; I8@ @8:?8 K 5; 5 J @<5 B7>>7CE65 G6 C8 5< G $; ?8 B8 C:7=8B 5;8 B7>>7D CE65 @B 75 7 <E@B<E=58B69 5< F< 5 G8: <@ 0 =E5 75 FE 5 =8 B7 57@C569 /@B8: 5<<B 5; 5 :$ B<J 67GG8B 5 @8 9 G :7$

_ :0 F<:8 C<::8C569 0 J8 ;86B <@ 57A;569 G< 7=68$;8:8 J @< 57F8 5< C; @A8 <E: G< 757<@$

hands, endeavouring to save themselves. They passed from our sight uninjured, disappeared one by one, and fell from precipice to precipice on to the Matterhorngletscher below, a distance of nearly 4000 feet in height. From the moment the rope broke it was impossible to help them.

So perished our comrades! For the space of half-an-hour we remained on the spot without moving a single step. The two men, paralysed by terror, cried like infants, and trembled in such a manner as to threaten us with the fate of the others. Old Peter rent the air with exclamations of "Chamounix! Oh, what will Chamounix say?" He meant, Who would believe that Croz could fall? The young man did nothing but scream or sob, "We are lost! we are lost!" Fixed between the two, I could neither move up nor down. I begged young Peter to descend, but he dared not. Unless he did, we could not advance. Old Peter became alive to the danger, and swelled the cry, "We are lost! we are lost!" The father's fear was natural—he trembled for his son; the young man's fear was cowardly—he thought of self alone. At last old Peter summoned up courage, and changed his position to a rock to which he could fix the rope; the young man then descended, and we all stood together. Immediately we did so, I asked for the rope which had given way, and found, to my surprise—indeed, to my horror—that it was the weakest of the three ropes. It was not brought, and should not have been employed, for the purpose for which it was used. It was old rope, and, compared with the others, was feeble. It was



ROPE BROKEN ON THE MATTERHORN.

7@58@B8B' ' ':8 8:?8Q 7@' C 8' J8' ; B' 5<' 68 ?8' FEC;' :<G8' =8;7@BQ 55 C;8B' 5<' :<CI $ ' J' 5' <@C8' 5; 5' ' 8:7<E ' HE8 57<@' J ' 7@?<6?8BQ @B' F B8' ;7F' A7?8' F8' 5;8' 8@B$ 5' ; B' =:<I8@' 7@' F7BD 7:Q @B' 75' B7B' @<5' GG8 :' 5<' ; ?8' E 5 7@8B' G:8?7<E ' 7@!E:9$

4<:' F<:8' 5; @' 5J<' ;<E: ' >58:J :B ' ' 5;<EA;5' 6F< 5' 8?8:9' F<F8@5' 5; 5' 5;8' @8L5' J<E6B' =8' F9' 6 5Q ><:' 5;8' EAJ 6B8: Q E558:69' E@@8:?8BQ J8:8' @<5' <@69' 7@C G =68' <>' A7?7@A' 7 5 @C8Q =E5' J8:8' 7@' EC;' ' 5 58' 5; 5' ' 67G' F7A;5' ; ?8' =88@' 8LG8C58B' >:<F' 5;8F' 5' @9' F<F8@5$ >58:' '57F8Q J8' J8:8' =68' 5<' B<5; 5' J;7C;' ;<E6B' ; ?8' =88@' B<@8' 5' >7: 5Q @B' >7L8B' :<G8' 5<' >7:F' :<CI Q 7@' BB757<@' 5<' =87@A' 578B' 5<A85;8:$;8 8' :<G8 ' J8:8' CE5' >:<G ' 57F8' 5<' 57F8Q @B' J8:8' 68>5' =8;7@B$P' ?8@' J75;' 5;87:' E: @C8' 5;8' F8@' J8:8' >: 7B' 5<' G:<C88BQ @B' 8?8: 6'57F8 ' <6B' 858:'5E:@8B' J75;' ;9' > C8' @B' > 658:7@A' 67F= Q @B' 7BQ J75;' 58::7=68' 8FG; 7 Q Y8'

QA

=<E5' ' $ $ J8' ::7?8B' 5'5;8' @<J' EG<@'5;8':7BA8' B8 C8@B7@A' 5<J :B ' V8:F 55Q @B' 66' G8:76' J ' <?8:$) 8' >:8HE8@569' 6<<I8BQ ;E5'7@' ? 7@Q ><:' 5: C8 ' <>' <E:' E@><:5E@ 58' C<FG @7<@ ' Q J8' =8@5' <?8:'5;8' :7BA8' @B' C:78B' 5<' 5;8FQ =E5' @<' <E@B' :85E:@8B$ <@ ' * ?7@C8B' 5'6 5'5; 5' 5;89' J8:8' @875;8:' J75;7@' 7A;5' @<:' ;8 :7@AQ J8' C8 8B' >:<F' <E:' E 868 ' 8>><:5 ' Q @BQ 5<<' C 5' B<J@' ><:' G88C;Q 768@569' A 5;8:8B' EG' <E:' 5;7@A Q @B' 5;8' 675568' 8>>8C5 ' <>' 5;< 8' E+;< J8:8' 6< 5Q G:8G : 5<:9' 5<' C<@57@E7@A' 5;8' B8 C8@5$) ;8@Q 6<' * ' F7A;59' :C;' GG8 :8BQ :7 7@A' =<?8' 5;8' 9 I FFQ ;7A;' 7@5<'5;8' I9$ 68Q C<6<E:68 Q @B' @<7 868 Q =E5' G8:>8C569' ; :G' @B' B8D >7@8BQ 8LC8G5' J;8:8' 75' J '6< 5'7@'5;8' C6<EB Q 5;7 ' E@8 :5;69' GG :7D 57<@' 88F8B' 67I8' ' ?7 7<@ >:<F' @<5;8:' J<:6BQ @BQ 6F< 5' GG 668BQ J8' J 5C;8B' J75;' F S8F8@5' 5;8' A: BE 6' B8?86<GF8@5' <>' 5J<' ? 5' C:< 8Q <@8' <@'875;8:' 7B8$ >' 5;8' EAJ 6B8: ' ; B' @<5' =88@'5;8' >7: 5' 5<' G8:C87?8' 75Q ' ;<E6B' ; ?8' B<E=58B' F9' 8@ 8 $;89' 5;<EA;5' 75' ; B' <F8' C<@@8C57<@' J75;' 5;8' CC7B8@5Q @B' Q >58:' ' J;768Q 5; 5' 75' F7A;5' =8 :' <F8' :86 57<@' 5<' <E: 86?8 $ E5' <E:

P' ;8 8' 8@B Q ' =8678?8Q :8' 5766' 55 C;8B' 5<' 5;8' :<CI Q @B' F :I' <E:' FI' <>' C8@5' @B' B8 C8@5$

F<?8F8@5 ' ; B' @<' 8>>8C5' EG<@' 75$;8' G8C5: 6 ><: F ' :8F 7@8B' F<57<@68 $ 5' J ' '>8 :>E6 @B' J<@B8:>E6 7A ; 50 E@7HE8' 7@' F9' 8LG8:78@C80 @B' 7F G:8 7?8' =89<@B' B8 C:7G57<@0 C<F7@A' 5' EC;' ' F<F8@5$P

' J ' :8 B9' 5<' 68 ?80 @B' J 757@A' ><:' 5;8' <5;8: 0 +;89' ; B' :8C<?8:8B' 5;87:' GG85758 ' @B' 5;8' E 8' <>' 5;87:' 5<@AE8 $;89' G<I8' 7@' G 5<7 0 J ;7C;' ' B7B' @<5' E@B8: 5 @B$ 5' 68@A5;' 5;8' <@

P' 88' 4:<@57 G78C8$ ' G 7B' ?8:9' 675568' 558@57<@' 5<' 5;7 ':8F :I =68' G;8@<F8@<@0 @B' J ' A6 B' J;8@' 75' B7 GG8 :8B0 ' 75' B7 5: C58B' <E:' 558@57<@$ /@B8:' <:B7@ :9 C7:CEF 5 @C8 ' ' ;<E6B' ; ?8' >865' ?8L8B' >58: J :B ' 5' @<5' ; ?7@A' <= 8:?8B' J75;' A:8 58:' G:8C7 7<@' @' <CCE::8@C8' <' : :8' @B' <' J<@B8:>E6$ ' C @' BB' ?8:N" 675568' =<E5 75' 5<' 5; 5;) ;7C;' 7 ' 7B' =<?8$;8' E@' J ' B7:8C569' 5' <E:' = CI '0 5; 5 7 '5<' 90 5;8' ><A =<J' J ' <GG< 758' 5<' 5;8' E@$;8' 57F8' J ' $ ' G$ $ 678' ><:F ' J8:8' 5 <@C8' 58@B8:' @B' ; :G' 0 @8E5: 6 7@' 5<@8' 0 J8:8' B8?86<G8B' A: BE 669' @B' B7 GG8 :8B' EBB8@69$;8' F7 5 ' J8:8' 67A;5' M5; 5' 7 0 @<5' B8@ 8N0 @B' J8:8' B7 7G 58B' 7@' 5;8' C<E: 8' <>' 5;8' 8?8@7@A$

5' ; ' ;88@' EAA8 58B' 5; 5' 5;8' C:< 8 ' :8' 7@C<::8C569' >7AE:8B' 7@' 5;8' 4:<@57 D G78C80 @B' 5; 5' 5;89' J8:8' G:<= =69' ><:F8B' =9' 5;8' 7@58: 8C57<@' <>' <5;8:' C7:C68 ' <:' 8667G 8 0 ' ;<J@' 7@ 5;8' @@8L8B' B7 A: F$ ' 5;7@I' 5;7 ' EAA8 57<@' 7 ' ?8:9' 67I869' C<::8C50 ;E5' ' ; ?8' G:8>8::8B' 5<' ><66<J' F9' <:7A7@ 6 F8F<: @BEF$

@' ::9R ' ' &' ' ' ' $' $ ' $' ' 25<0 Q 0 5;8:8' 7 0 5' GG$ 0 @ CC<E@5' <>' 5;8' <CCE::8@C8' <>' ' G;8@<F8@<@' @ 6<D A<E ' 5<' 5;8' =<?8 F8@57<@8B' <@8$ Z 5' ; 6> G 5 >7?8' G$ $ J8' J75@8 8B' ' ?8:9' =8 E57>E6' @ 5E: 6 $ G;8@<F8@<@$ ' =:< B' J;758' ><A ;<J' >7: 5' GG8 :8B <GG< 758' 5<' 5;8' E@0 ' J '?8:9' C<F F<@69' 5;8' C 80RR 85C$ '><66<J' ::9' 7@' E 7@A' 5;8' 58:F' ><A =<J$

5' F 9' ;8' <= 8:?8B' 5; 50 EG<@' 5;8' B8 C8@5' <>' 5;8 5 67 @' AE7B8 ' MJ";< 8' 8LG8B7D 57<@' 7 ' @<57C8B' EG<@' G$ 0 @B' A 7@' 7@' 5;8' GG8@B7LN0 EG<@' .E69' 15;0 0 5;8' G;8@<F8@<@' C<F F<@69' 58:F8B' 5;8' :<CI8@' J ' <=$ 8:?8B$ Y ;8' ><66<J7@A' 7 ' 5;8' CC<E@5' A7?8@' =9' 5;8' ==8' F8' &<::85' 7@' 5;8' 2 ' D ' C5<=8:' 0 '[K' Z' %<E ' 857<@ ' E:' RBG E68' M5=8' ć ;<E6B8:R' HE @B' @<E ' :8F 7HE F8 'E@' G=8@<F8E8' HE7' @<E ' >75' G6 7 7:' 0 68' @E A8' 85 75' 5:8 B8@ 8' BE' C<58' B8' (65<:@ @C;8' 8RB5 75' 8:87@' 8@' E7 8' @<E ' @<E ' ?7F8 ' @' F767855' BRE@' <8:C68' EL' C<E68E:' B8' R :C 8@ C786' C8' F7: A8' @<E ' ><: F 75' .' 5<E ' 67@8' C<E:<@@8' E' F7678E' B8' 6 HE8668' @<E ' ?<bB<@ ' @<5:8' <F=:8$3 ;7 ' <CCE::8B' 5' =<E5' $ ' 5<' 1' 6* *!' @B' 5;8' 5 67 @ ' 7@' F8@57<@' J8:8' 5' =<E5' 5;8' F8' ;87A;5' ' <E: 86?8 K@ F869' 20 ' >885$

said in French, "Monsieur." "Yes." "We are poor men; we have lost our Herr; we shall not get paid; we can ill afford this."* "Stop!" I said, interrupting him, "that is nonsense; I shall pay you, of course, just as if your Herr were here." They talked together in their patois for a short time, and then the son spoke again. "We don't wish you to pay us. We wish you to write in the hotel-book at Zermatt, and to your journals, that we have not been paid." "What nonsense are you talking? I don't understand you. What do you mean?" He proceeded—"Why, next year there will be many travellers at Zermatt, and we shall get more *voyageurs*." †

Who would answer such a proposition? I made them no reply in words,‡ but they knew very well the indignation that I felt. They filled the cup of bitterness to overflowing, and I tore down the cliff, madly and recklessly, in a way that caused them, more than once, to inquire if I wished to kill them. Night fell; and for an hour the descent was continued in the darkness. At half-past 9 a resting-place was found, and upon a wretched slab, barely large enough to hold the three, we passed six miserable hours. At day-break the descent was resumed, and from the Hörnli ridge we ran down to the chalets of Buhl, and on to Zermatt. Seiler met me at his door, and followed in silence to my room. "What is the matter?" "The Taugwalders and I have returned." He did not need more, and burst into tears; but lost no time in useless lamentations, and set to work to arouse the village. Ere long a score of men had started

MONSIEUR ALEX. SEILER.

* They had been travelling with, and had been engaged by, Lord F. Douglas, and so considered him their employer, and responsible to them.

† Transcribed from the original memorandum.

‡ Nor did I speak to them afterwards, unless it was absolutely necessary, so long as we were together.

5<' C8@B' 5;8' <;67C;5' ;87A;5 0' =<?8' U 6=8:F 55' @B' VR E550' J;7C;'C<FF 8B'5;8'G6 58 E'<>'5;8' 558:;<:@A685 C;8:$;89' :85E:@8B' >58:' 7L';<E:0' @B':8G<:58B'5; 5'5;89'; B' 88@'5;8'=<B78' 697@A' F<57<@68 '<@'5;8' @<J$;7'J '<@' 5E:B 90' @B'5;89' G:<G< 8B'5; 5'J8' ;<E6B'68 ?8'<@" E@B 9'8?8@7@A0' <' '5<' ::7?8 EG<@'5;8'G6 58 E' 5'B 9=:8 I'<@' <@B 9$ /@J7667@A'5<' 6< 8'5;8' 67A;58 5'C; @C80'5;8' 8?$.$ 5 <:F78I' @B' ':8 <6?8B'5<' 5 :5'<@ E@B 9'F<:@7@A$;8'V8:F 55' F8@0'5;:8 58@8B'J75;'8LC<FFE@7D C 57<@'=9'5;87:'G:78 5'7>'5;89'> 768B'5<' 558@B'5;8'8 :69'F 0' J8:8' E@ =68'5<' CC<FG @9'E $ <' 8?8: 6'<>'5;8F0' 5'68 50'5;7'J '' 8?8:8'5:7 60' @B' 858:' 8:F'B8C6 :8B'J75;'58 :'5; 5'@<5;7@A'86 8' J<E+B' ; ?8'G:8?8@58B' ;7F'>:<F'!<7@7@A'7@'5;8' 8 :C;'><:';7'<6B' C<F: B8 $ @A67 ;F8@'C F8'5<' <E:'7B$" ;8' 8?$.$ <=8:5 <@ @B' :$.$;766G<55'<>>8:8B'5;8F 86?8 0' @B'5;87:'AE7B8' : @S @B8:F 558@'0P' @<5;8:' @A67 ;F @' 68@5' E' .< 8G;' :78' @B' 68L @B:8' <C;F 558:$ 4:8B8:7C' 9<50' @B' .8 @' 7:: S0' <' ; F<E@7L0' 6 <' ?<6E@588:8B$

) 8' 5 :58B' 5' Q' $ 2' <@' E@B 9'5;8' 5;0' @B' ><66<J8B'5;8' :<E58' 7 5'J8';B'5 I8@'<@'5;8'G:8?7<E' ;E:B 9'E'>:' '5;8' /<F67$ 4:<F'5;8@C8'J8'J8@5'B<J@'5<'5;8' :7A;5'<>'5;8' :7BA80>' @B'F<E@58B'5;:<EA;'5;8' .:C'<>'5;8' 558:;<:@A685 <;8:$ 9' $ 'J8' ;B'A<5'5<'5;8'G6 58 E' 5'5;8'5<G'<>'5;8'A6 C78:0' @B' J75;7@' 7A;5'<>'5;8'C<:@8:'7@'J;7C;'J8'I@8J'F9'C<FG @7<@'FE 5' =8$!' 'J8' J'<@8'J8 5;8: =8 58@'F @' >58:' @<5;8:' : 7 8'5;8" 5868 C<G80'5E:@'B8 B69'G 68' @B'G '75'<@'J75;<E5'J<:B'5<'5;8' @8L50' J8'I@8J'5; 5' 66' ;<G8'J 'A<@8$) 8' GG:< C;8B$;89' ; B'> 668@'=86<J' '5;89'; B'> 668@' =<?8K :<S'675568'7@' B? @C80' B<J'@8 :';7F0' @B' EB <@' <F8'B7 5 @C8'=8;7@B'0 =E5'<>' <:B' 4$ '<EA6 'J8'C<E6B' 88'@<5;7@A$d") 8'68>5'5;8F'J;8:'5;89'>8660

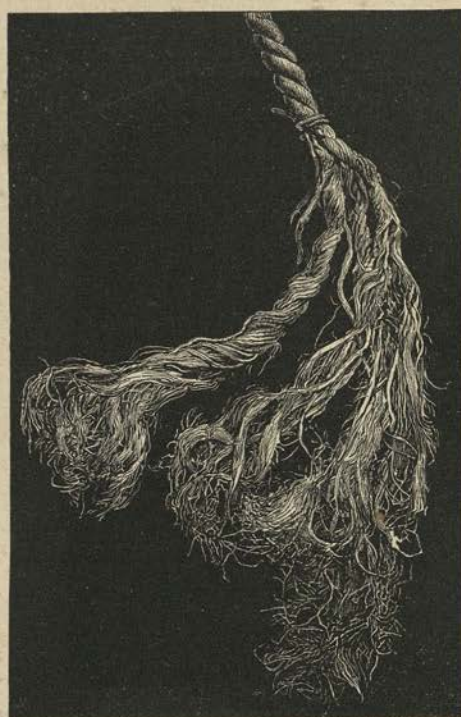
P 'G<:5: 75'<>'4: @S' @B87F 558@'7'A7?8@'7@'5;8'8@A: ?7@A'> C7@A'G$ Q Q$

5' <'5;8'G<7@5'F :I8B'V'<@'5;8'F G$.' :I8B'J75;'C:< '<@'5;8'F G$

d 'G 7:'<>'A6<?8 0' '=865 0' @B'=<<5'5; 5' ; B'=86<@A8B'5<';7F'J8:8'><E@B$;7 0' <F8;<J0'=8C F8'GE=67C69'I@<J@0' @B'A ?8' :7 8'5<' J76B' @<57<@ 0' J;7C;'J<E6B'@<5' ; ?8'=88@'8775875 7@8B'; B'75'=88' 6<'I@<J@'5; 5'5;8'9$I '<>'5;8'=<<5'<>'5;<8' J;<'; B'> 668@'9 ' &&' @B'J8:8'697@A'EG<@'5;8' @<J'@8 :'5;8'=<B78 $

buried in snow at the base of the grandest cliff of the most majestic mountain of the Alps.

All those who had fallen had been tied with the Manilla, or with the second and equally strong rope, and, consequently, there had been only one link—that between old Peter and Lord F. Douglas—where the weaker rope had been used. This had a very ugly look for Taugwalder, for it was not possible to suppose that the others would have sanctioned the employment of a rope so greatly inferior in strength when there were more than 250 feet of the better qualities still remaining out of use.* For the sake of the old guide (who bore a good reputation), and upon all other accounts, it was desirable that this matter should be cleared up; and after my examination before the court of inquiry which was instituted by the Government was over, I handed in a number of questions which were framed so as to afford old Peter an opportunity of exculpating himself from the grave suspicions which at once fell upon him.



THE MANILLA ROPE.†

* I was one hundred feet or more from the others whilst they were being tied up, and am unable to throw any light on the matter. Croz and old Peter no doubt tied up the others.

† The three ropes have been reduced by photography to the same scale.

;8HE8 57<@ 0 J 5<6B0 J8:8GE5 @B @ J8:8B0 =E55;8 @ J8: 0 65;<EA;G:<F7 8B0 ; ?8@8?8:5:8 C;8B F8$P

8 @J;7680 5;8 BF7@7 5: 57<@ 8@5 5:7C57@!E@C57<@ 5<:8C<?8:5 5;8 =<B78 0 @B EG<@5;8 5;<>.E690 5J8@59 <@8 F8@<>V8:F 55 CC<FG67 ;8B5; 5 B @B B @A8:<E 5 I$">P >5;8=<B9<> <:B 4: @C7 '<EA6 5;890 5<<0 J @<5;7@A0 75 7 G:<= =69 5766 :D :8 58B<@5;8:<CI =<?8$.' ;8 :8F 7@ <> EB <@ @B B<J

P ;7 7 @<5 <@69<CC 7<@ EG<@J;7C;$ 68F8@S MJ;<G:8 7B8B<?8:5;8 7@HE7:9N ; > 768B5<A7?8EG @ J8:5; 5 ;8 ; G:<F7 8B$ 5 7 A:8 569 5<;8 :8A:8558B5; 5 ;8 B<8 @<5>886 5; 5 5;8 EGG:8 7<@<>5;8 5:E5;7 8HE 669 A 7@ 5 5;8 7@58:8 5 <>5: ?8668 7 @B <>5;8 AE7B8 > 5;8 F8@ :8 E@5:E 5J<:5;90 5;8 GE=67C ;<E6B ;8 J :@8B<>5;8> C50 =E57>5;89 :8=6 F868 0 J;9 66<J5;8F5<:8F 7@ E@B8:E@7@A:758B E G7C7<@^

6B >558: EAJ 6B8:7 F @ J;<7 6 =<E:7@A E@B8: @ E@!E 5 CCE 57<@$ %<5J75; 5 @B7@A :8G8 58B B8@7 6 0 8?8@ ;7 C<F: B8 @B @87A;=<E: 5 V8:F 55 G8: 7 5 7@ 8:57@A<:7@ 7@E 57@A5; 5 ;8 2 5;8:<G8 J;7C;68B>:<F 7F5< <:B 4$ '<EA6 $ @ :8A :B 5<5;7 7@> F<E '<; :A80 9 5; 5 ;8 2 '@<5 B< < 5 5;8 F<F8@5<>5;8 67G0 @B 5; 5 5;8 8@B<>5;8 :<G8 7@ F9 G< 8 7<@ ;<J 567 5 ;8 B7B @<5 B< <;8><:8; @B$;8:8 :8F 7@ 0 ;<J8?8:0 5;8 E$ G7C7<E > C5 5; 5 5;8 :<G8 J;7C;=:<I8 J 5;8 5;7@@8 5 @B J8 I8 5<@8 5; 5 J8 ; B$ 5 7 E G7C7<E 0 =8C E 8 75 7 E@67I869 5; 5 @9 <>5;8><E:F8@7@>:<@5 J<E6B ; ?8 868C58B @<6B @B J8 I :<G8 J;8@5;8:8 J =E@B @C8<>@8J0 @B FEC;5:<@A8:0 :<G8 5< G :8 0 @B0 <@ 5;8<5;8:; @B0 =8C E 8 7> EAJ 6B8:5;<EA;5 5 5 @ CC7B8@5 J 67I869 5<; GG8@0 75 J 5<;7 7@58:8 5 5<; ?8 5;8 J8 I8:<G8 J;8:8 75)" G6 C8B$

;<E6B:8!<7C8 5<68 :@5; 5 ;7 @ J8: 5<5;8 HE8 57<@ J;7C;J8:8 GE5 5<;7F J8:8 57 > C5<:9 7 <5 <@69 J ;7 C5 5 5;8 C:757C 6 F<F8@5 J<@B8:>E6 >8 5 <> 5:8@A5;0 =E5 75 J BF7: =68"7@ 75 G8:><:F @C8 5 5;8 :7A;5 57F8 F 5<6B 5; 5 ;8 7 @<J @8 :69 7@C G =68 ><:J<:I K @<5 =<6E5869 F B0 =E5 J75;7@58668C5 A<@8 @B 6F< 5C: S9 0 J;7C;7 @<5 5<=8 J<@B8:8B 50 J;85;8:J8 :8A :B ;7F F @ J;<C<@58FG6 58B C<E@B:8669 F8 @@8 0 <: @ 7@!E:8B F @ E>8:7@A E@B8: @ E@!E 5 CCE 57<@$

@ :8 G8C5 5<9<E@A 858:0 75 7 @<5 G< 7=68 5<G8 I 7@5;8 F8 F @@8:$;8 <B7<55 7B8 5; 5 ;8 G:<G<E@B8B MJ;7C;=8678?8 8F @ 58B >:<F 0 ;8 ; 8@B8 ?<E:8B5<5: B8 EG<@0 7@ G758 <>5;8> C5 5; 5 ;7 >5;8:J G 7B M><:=<577N 7@ 5;8G:8 8@C8 <>J75@8 8 $) ; 58?8:F 9 =8 ;7 =7675 7 AE7B80 ;8 7 @<5 <@8 5<J;<F J<E6B 8?8:5:E 5 F9 67>80 <:> ><:B @9 C<E@58@ @C8$

5 6789 ><66<J8B5;8 :<E58 6 7B B<J@EG<@5;8 F G0 @B <@5;8:B8 C8@5 J"8:8 7@ A:8 5G8:76>:<F 5;8 > 66 <> 8 ;8 C; C58:<>5;8 J<:I"5;89 E@B8:5<<I F 9 =8 A 5;8:8B >:<F 8>8:8@C8 5<G$ $

;7 0 <: E= 8HE8@5G :590 B7 C<?8:8B 688?8$ %<<5;8:5: C8 ; ?8=88@><E@B$

were interred upon the north side of the Zermatt Church, in the presence of a reverent crowd of sympathising friends. The body of Michel Croz lies upon the other side, under a simpler tomb; whose inscription bears honourable testimony to his rectitude, to his courage, and to his devotion.*

THE SECOND ROPE.

So the traditional inaccessibility of the Matterhorn was vanquished, and was replaced by legends of a more real character. Others will essay to scale its proud cliffs, but to none will it be the mountain that it was to its early explorers. Others may tread its summit-snows, but none will ever know the feelings of those who first gazed upon its marvellous panorama; and none, I trust, will ever be compelled to tell of joy turned into grief, and of laughter into mourning. It proved to be a stubborn foe; it resisted long, and gave many a hard blow; it was defeated at last with an ease that none could have anticipated, but, like a relentless enemy—conquered but not crushed—it took terrible vengeance. The time may come when

* At the instance of Mr. Alfred Wills, a subscription list was opened for the benefit of the sisters of Michel Croz, who had been partly dependent upon his earnings. In a short time more than £280 were raised. This was considered sufficient, and the list was closed. The proceeds were invested in French Rentes (by Mr. William Mathews), at the recommendation of M. Dupui, at that time Maire of Chamounix.

5;8' 558:;<:@' ; 66' ; ?8' G 8B' J 9 @B' @<5;7@A ?8' ';8 G' <>' ; G868 '>: AF8@5 J766' F :I'5;8' G<5' J;8:8' 5;8' A:8 5' F<E@D 5 7@' 5<<B >:<:C 5<F'=9' 5<F 7@C;'=9'7@C;@B' 9 :B'=9'9 :B 75' 97>86B'5<' ><:C ' J;7C;'@<5;7@A' C @' J75; 5 @B$; 5'57F8'7'>:' B7 5 @50 @B A8';8@C8 A8@8: 57<@'E@=<:@' J766' A S8' EG<@' 75' J>E6'G:8C7G7C8 @B' J<@B8:' 5'75'E@7HE8'><:F$ <J8?8:'8L 658B' F 9';8'5;87:'7B8 @B' ;<J8?8:'8L AA8: 58B'5;87:' 8LG8C5 57<@ @<@8' J766' C<F8'5<':85E:@'B7 GG<7@58B'

;8'G6 9'7'<?8:@B'5;8'CE:5 7@'7' =<E5'5<'>66$ 8><:8'J8 G :50 ' J<:B'EG<@'5;8'A: ?8:'58 C;7@A'<>'5;8' F<E@5 7@ $ 88' 9<@B8:';87A;5'' R 7'>:' J 9KE@=7BB8@'C<F8'5;8' J<:B'Z FD G< 7=68'3 Z' <5 <03 9'5;8'F<E@5 7@88:$ Z' ;8'J 9'7'6<@A0 ' I@<J'0 75R'B7>>7CE65K 75' F 9'=8KB @A8:<E $ 5R' G< 7=680 RF' E:8'0 R66' 88I'5; 'J 9'0 5 I8'C<E@ 86'<>'F9'=:<5;8:'F<E@5 7@88: 0' @B'>7@B';<J'5;89'; ?8'A 7@8B' 7F76 :';87A;5 0' @B'68 :@8B'5<' ?<7B' $5;8'B @A8: $3 8' 5 :5'M 66' 6EF=8:7@A'B<J@'=86<JN 0 5;8'G 5;'7' 67GG8:9KF 9'=8'6 =<:7<E 0'5<<$ E57<@' @B'G8: 8?8: @C8'A 7@ 5;8'B 9K5;8';87A;5'7':8 C;8B' @B'5;<8'=8@8 5;'C:90 Z @C:8D B7=68'0 R57'EG8:;EF @'3

) 8'J;<A<F<E@5 7@ C: F=67@A';?8'C<@ 5 @569'85'=8><:8'E' 5;8'EG8:7<:759'<>'>7L8B'GE:G< 8'<:'G8: 8?8: @C8'5<'=:E58'><:C8$ (8 I@<J'5; 5'8 C;';87A;50 8 C;'58G0 FE 5'=8'A 7@8B'=9'G 578@50 6 =<D :7<E'5<760 @B'5; 5'J7 ;7@A'C @@<5'5 I8'5;8'G6 C8'<>'J<:I7@A0 J8 I@<J'5;8'=8@8>75'<>' FE5E 6' 7B'0 5; 5' F @9' ' B7>7 CE659'FE 5'=8' 8@C<E@58:8B0 @B' F @9' @' <= 5 C68' FE 5'=8'A: GG68B' J75;'<:' 5E:@8B0 =E5'J8' I@<J'5; 5'J;8:8'5;8:8R' ')766'5;8:8R' ' J 9[@B' J8'C<F8'= CI'5<'<E:' B 769'<CCEG 57<@'=8558:'>7558B'5<' >7A;5'5;8' = 5568'<>'67>80 @B'5<'<?8:C<F8'5;8'7FG8B7F8@5' J;7C;'<= 5:EC5'<E:' G 5; 0 5:8@A5;8@8B' @B'C;88:8B'=9'5;8':8C<668C57<@'<>'G 5'6 =<E: 0 @B'=9'5;8'F8F<:78'<>'?7C5<:78'A 7@8B'7@'<5;8:'>786B $

';?8'@<5'F B8'F9 86>' @' B?<C 58'<:' @' G<6<A7 5'><:'F<E@D 5 7@88:7@A0@<:'B<'@<J'7@58@B'5<'E E:G'5;8'>E@C57<@'<>''F<: 67 50 =E5'F9'5 I'J<E6B';?8'=88@'766'G8:><:F8B'7>'75';B'=88@'C<@C6EB8B

J75;<E5 <@8 :8>8:8@C8 5< 5;8 F<:8 8:7<E ' 68 <@ '<> 5;8 F<E@D 5 7@88:$) 8 A6<:9 7@ 5;8 G;9 7C 6 :8A8@8: 57<@ J;7C;' 7 ' 5;8 G:<D BEC5 <> <E:' 8L8:57<@ ' 0 J8 8LE65 <?8:' 5;8 A: @B8E:' <> 5;8 C8@8 ' 5; 5 :8 =:<EA;5=8><:8 <E:' 898 0 5;8 G68@B<E: ' <> E@:7 8 @B E@D 850 @B 5;8 =8 E578 ' <> ;7660 B 680 6 I80 J<<B0 @B J 58:> 660 ;E5 J8 ? 6E8 F<:8 ;7A;69 5;8 B8?86<GF8@5 <> F @67@8 0 @B 5;8 8?<6E57<@0 E@B8:' C<F= 5 J75;' B7>>7CE6578 0 <>5;< 8 @<=68 HE 67578 ' <> ;EF @ @ 5E:8K C<E: A80 G 578@C80 8@BE: @C80 @B ><:575EB8$

<F8 ;<6B 5;8 8 ?;5E8 ' 7@ 68 ' 8 57F 57<@0 @B 7A@ = 8 @B C<@58FG57=68 F<57?8 ' 5< 5;< 8 J;< 7@BE6A8 7@ <::' 7@@<C8@5 G<:5$

Z 8 5;<E C; 58 ' 7C80 ' GE:8 ' @<J0 5;<E ; 65 @<5 8 C G8 C 6EF@9$3

5;8: 0 A 7@0 J;< :8 @<5 B85: C5<: 0 >7@B F<E@5 7@88:7@A0 ' ' G<:50 5< ;8 J;<669 E@7@58667A7=68$ 5 7 ' @<5 A:8 0569 5< ;8 J<@B8:8B 5K J8 :8 @<5 66 C<@ 575E58B ;I8$ <E@5 7@88:7@A 7 ' GE: E75 8 8@57 669 B G58B 5< 5;8 9<E@A <:' ?7A<:<E 0 @B @<5 5< 5;8 <6B <:' >88=68$ < 5;8 6 558:0 5<76 F 9 ;8 @< G68 E:8 0 @B 75 7 ' <>58@ 7B =9 EC;'G8: <@ 0 Z ;7 ' F @7 ' F I7@A ' 5<76 <> G68 E:803 85 5;8 F<55< <@ 5;8 57568 G A8 ;8 @ @ J8:0 7> @ @ J8:' ;8 :8HE7:8B$ <76 ;8 FE 5 J;< A<8 ' F<E@5 7@88:7@A0 ;E5 <E5 <> 5;8 5<76 C<F8 ' 5:8@A5;' M@<5 F8:869 FE CE6 :'8@8:A9K F<:8 5; @ 5; 5N0 @ J I8@7@A <> 66 5;8 > CE6578 0 @B >:<F 5;8 5:8@A5;' :7 8 ' G68 E:8$ P ;8@0 A 7@0 75 7 ' <>58@ I8B0 7@ 5<@8 ' J;7C;' 88F'5< 7FG69 5; 5 5;8 @ J8:' FE 50 5 68 50 =8 B<E=5>E60 Z E5 B<8 ' 75 :8G 9 9<E^3) 866 J8 C @@<5 8 57F 58 <E:' 8@!<9F8@5 ' 9<E F8 E:8 9<E:' J7@80 <:' J87A;' 9<E:' 68 B0K 75 7 ' :8 60 @8?8:5;868 $ >' ' C<E6B =6<5 <E5 8?8:9 :8F7@7 C8@C80 <:' 8: 8 8?8:9 F8F<:90 5766 ' ;<E6B 9 5; 5 F9 C: F=68 ' F<@A 5 5;8 6G ' ; ?8 :8G 7B F80 ><:' 5;89 ; ?8 A7?8@ F8 5J<' <> 5;8 =8 5 5;7@A ' ' F @ C @ G< 8 K;8 65;' @B >:78@B $

;8 :8C<668C57<@ ' <> G 5 G68 E:8 ' C @@<5 =8 8>> C8B$?8@ @<J ' ' J:758 5;89 C:<JB EG =8><:8F8$ 47: 5 C<F8 ' @ 8@B68 ' 8:78 ' <> G7C5E:8 0 F A@7>7C8@5 7@ ><: F0 8>>8C50 @B C<6<E:$ ' 88 5;8 A:8 5 G8 I 0 J75;' C6<EB8B 5<G 0 88F7@A 5< F<E@5 EG ><:' 8?8:' @B

ever ; I hear the music of the distant herds, the peasant's jodel, and the solemn church-bells ; and I scent the fragrant breath of the pines : and after these have passed away, another train of thoughts succeeds—of those who have been upright, brave, and true ; of kind hearts and bold deeds ; and of courtesies received at stranger hands, trifles in themselves, but expressive of that good will towards men which is the essence of charity.

Still, the last, sad memory hovers round, and sometimes drifts across like floating mist, cutting off sunshine, and chilling the remembrance of happier times. There have been joys too great to be described in words, and there have been griefs upon which I have not dared to dwell ; and with these in mind I say, Climb if you will, but remember that courage and strength are nought without prudence, and that a momentary negligence may destroy the happiness of a lifetime. Do nothing in haste ; look well to each step ; and from the beginning think what may be the end.

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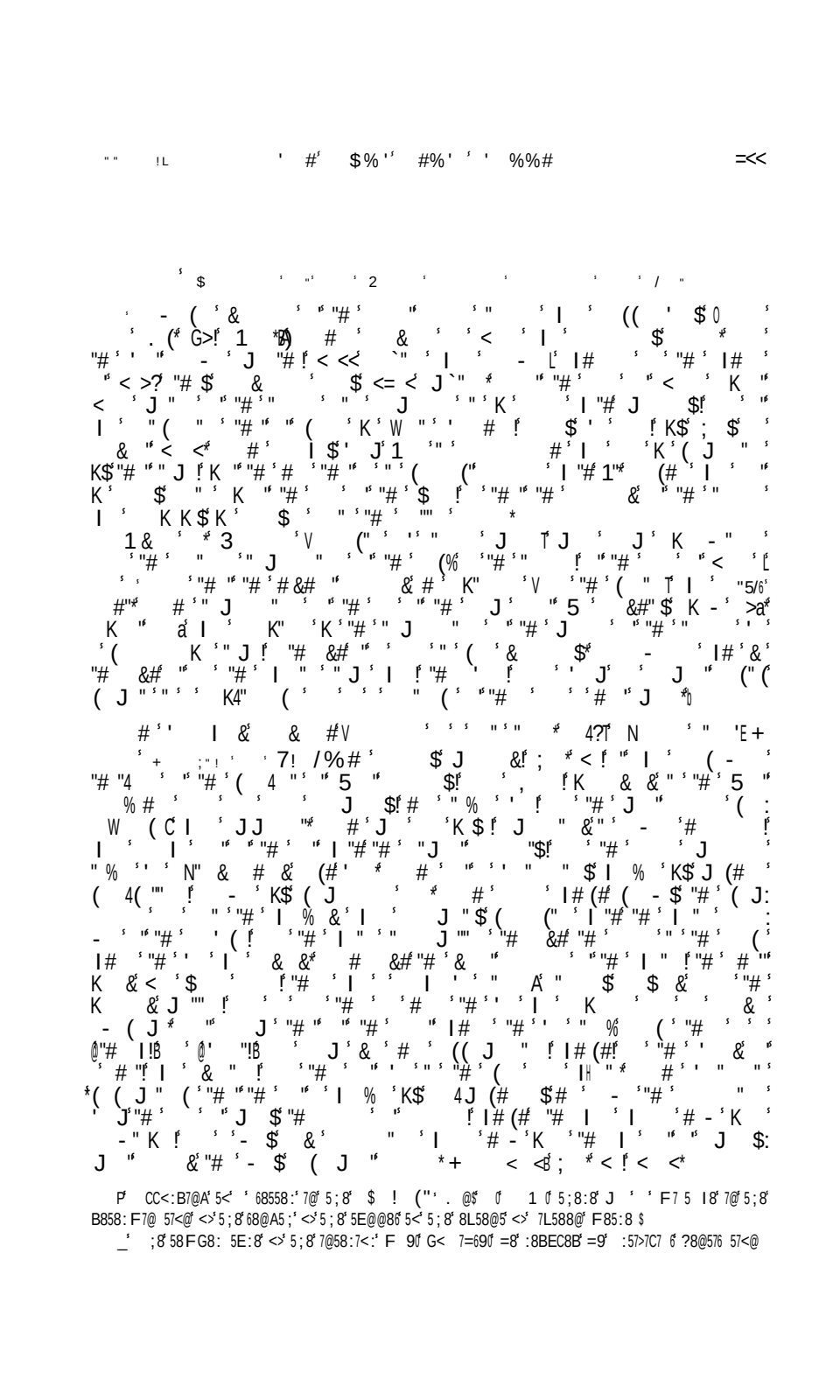

2 Q) %)' ( ) ' * &' %+) 66 . 7*

$ ' 1 ' "' <<

@' 48=:E :9' Q 0' 20' :$ $ $' &< 85' @B' :$ ' 5 :58B':<F'5;8 ?766 A8':>' :B<@' M =<E5' F7B J 9'=85J88@' 7<@' @B' :57A@9N0'5<' F I8' 5;8' C8@5'<>'5;8' E5 B8 :9' M ' >885N0' J75;'5;8' AE7B8 '.$.$ % @C80' 4$ 8;<50' $' 8? :B0' @B' .$.$ 8@@8@$;89' ::7?8B' J75;7@' ' >8J';E@B:8B' >885' <' 5;8' EF F75'=8>:<:8' F7B B 90' @B' B858:F7@8B'5<' C<F G6858'5;8' C8@5'=9'<66<JD 7@A'5;8'C:8 5'<>' ':7BA8'68 B7@A'5<J :B '5;8'8 5$ 8>:<:8' 5;7 ' C<E6B'=8'B<@8' 75'J '@8C8 :9'5<' C:< ' <F8' 588G' @<J'0 @B0'J;768'G 7@A'5;70' @' ? D 6 @C;8' J ' E@><:5E@ 5869' 5 :58B$ 8@@8@' @B' :$ ' G8:7;8B'0 5;8 <5;8:';GG769'8 C G8B$;8'><66<J7@A'@ :: 57?80'>:<F'5;8'G8@'<>' :$&< 850' 766E 5: 58 0'7@' '?8:9'7FG:8 7?8' F @@8:0'5;8' B @A8:'<>'5: ?8: 7@A'@8J > 668@' @<J' 5'C<@ 7B8: =68'7@C67@ 57<@';[K

Z')8';B'5<'A<'EG' ' 588G'A@<J >786B0' =<E5' ' >885';7A;0' ' J866' ' :8F8F=8:$ 5' J ' =<E5' ' >885'=:< B' 5' 5;8' 5<G0' @B' 2 ' <:' ' 5' 5;8' =<55<F$ 5' J ' ' 2' <>'C<E6<7:' <@' '6 :A8' C 68$ 'E:7@A' 5;8' C8@5' J8' @I' =<E5' <@8' ><<5' B88G' 5' 8?8:9' 58G$ 8@@8@' B7B' @<5' 88F' 5<' 67I8'5;8'6<<I' <>' 5;8' @<J' ?8:9' FEC;$ 8' I8B';5;8'6<C 6' AE7B8' J;85;8:' ? 6 @C;8' 8?8:' C F8' B<J@' 5;7' C<E6<7:0' 5<' J;7C;' 5;89' @ J8:8B' 5; 5' <E:' G< 757<@' J ' G8:>8C569' >8$) 8' ; B' F<E@58B' <@' 5;8' @<:5;8:@' 7B8' <>'5;8'C<E6<7:0' @B';?7@A' ::7?8B' 5' '>885'>:<F'5;8'5<G0'J8' =8A @'C:< 7@A'75'<@' ';<:7F@5 6' CE:?80' <' ' 5<' A 7@' 5;8' $:858$;8'7@D >68L7<@' <:' B7G' <>'5;8' C<E6<7:') ' 67A;50'@<5' =<?8' Q ' Z>885'0 5;8'7@C67@ 57<@' @8 :' `$')8'J"8:8 J 6I7@A'7@'5;8'><66<J7@A' <:B8:'[K 8? :B0' % @C80' 8@D @8@@' F9 86>0' $0' @B' 8=<5$ 6 ?7@A'C:< 8B'<?8:' =<E5';:88 HE :58:'<>'5;8' =:8 B5;'<>'5;8'C<E6<7:0'5;8'5J<'68 B7@A'F8@' EBB8@69' @I'C<@ 7B8: =69' =<?8' 5;87:'J 7 5 $ 8@@8@'57A;58@8B'5;8':<G8$;8' @<J'J '5<<' B88G'5<'5;7@I' <>'A8557@A'<E5'<>'5;8' ;<68';89'; B' F B80' <' 5;89' B? @C8B'<@8'<:'5J< 58G 0'B7?7B7@A'5;8' @<J'J75;'5;87:' =<B78 $ 8@@8@' 5E:@8B':<E@B' @B'5<6B' E ';8'J ' >: 7B'<>' 5 :57@A' @' ? 6 @C;8'0 J"8' I8B' J;85;8:'75'J<E6B'@<5'=8 =8558:'5<':85E:@' @B' C:< ' 5;8' C<E6<7:' ;7A;8:'EG$ <' 5;7' 5;8' 5;:88' :B<@' F8@'<GG<8B'5;8F 86?8'0 5;89'F7 5<<I'5;8'G:<G< 8B'G:8C E57<@'><:'>8 :0' @B' 5;8'5J<'68 B7@A'F8@'C<@57@E8B'5;87:'J<:I$ >58:'5;:88'<:'><E:' 58G'A 7@8B' 7@' 5;8' ><:8 7B' F @@8:0'5;8' @<J'=8C F8';:B' A 7@$ 8@@8@' ;B'@<5 F<?8B K;8'J '8?7B8@569'E@B8C7B8B'J; 5' ;8' ;<E6B'B<0' ' <<@0';<J8?8:0' ';8'$ J';:B' @<J' A 7@0';8' B? @C8B' @B' C:< 8B' G : 6680'5<0'=E5' =<?80' 5;8'>E::<J'5;8' :B<@' F8@';B'F B8$ 5: @A8'5<' 90'5;8' @<J' EGG<:58B' ;7F$) ;768';8'J 'G 7@A'' <= 8:?8B'5; 5'5;8'68 B8:0' 8? :B0';B'58@'<:' 5J86?8'>885'<>':<G8'C<768B':<E@B';7 ' ;<E6B8:$ ' <>'C<E: 8' 5' <@C8'5<6B';7F' 5<'E@C<76'75' @B'A85'<@'5;8' :8580'>:<F'J;7C;' ;8'J ' @<5'F<:8'5; @' >7>588@' >885'B7 5 @5$ 8@@8@'5;8@';?8:9'>7: 5$ <' ' J8@5'5;:<EA;'5;8'>E::<J 0' ;<6B7@A'F9' 86=<J'C6< 8'5<'F9'=<B90' <' '@<5'5<'5<EC;'5;8'7B8 $;7'>E::<J'J ' =<E5' 5J86?8'>885'6<@A0' @B' '5;8' @<J'J 'A<<B'<@'5;8'<5;8:'7B80'J8'; B' 66'C<F8' 5<'5;8'>6 8'C<@C6E 7<@'5; 5'5;8' @<J'J P+' CC7B8@5 669' <>58:'5;8:8'5; @'86 8

P' 88'G$ $

J ;8:8$ 8@778@' B? @C8B'0 ;8' ; B' F B8' =E5' ' >8J' 58G ' J ;8@' J8' ;8 :B' ' B88G0' CE557@A' <E@B$;8' @<J >786B' G675' 7@' 5J<' =<E5' ><E:588@' <:' >7>588@' >885' =<?8' E $;8' C68>5' J ' 5' >7: 5' HE758' @ ::<J0' @<5' F<:8' 5; @' @' 7@C;' =:< B$ @' J>E6' 768@C8' 8@ E8B'0 75' 6 58B' =E5' ' >8J' 8C<@B 0' @B' 5;8@' 75' J ' =:<I8@' =9' 8@@8@R' ?<7C80' ć) 8' :8' 66' 6< 5$R * 7 ' J"<:B ' J8:8' 6<J' @B' <68F@0' @B' 5;< 8' J ;<' I@8J' ;7F' >865' J ; 5' 5;89' :8 669' F8 @5' J ;8@' G<I8@' =9' EC;' ' F @' ' 8@@8@$;89' J8:8' ;7 ' 6 5' J<:B $ ' B:<?8' F9' 6G8@D 5<CI' 7@5<' 5;8' @<J0' @B' =:<EA;5' 5;8' J87A;5' <>' F9' =<B9'5<' =8 :' <@' 75$ ' 5;8@' J 758B$ 5' J ' @' J>E6' F<F8@5' <>' E G8@ 8$ ' 5E:@8B' F9' ;8 B'5<D J :B ' 8@@8@'5<' 88' J ;85;8:' ;8' ; B' B<@8'5;8' F8'5;7@A$ <' F9' 5<@7 ;D F8@5' ' J' ;7F' 5E:@' :<E@B0> C8' 5;8' ? 6680' @B' 5:85C;' <E5' =<5;' :F $;8' @<J' <@' J ;7C;' J8' 5<<B' =8A @' 5<' F<?8' 6<J690' @B' ' >865'5;8' E558:' E 8D 68 @8 ' <>' @9' 6G8@ 5<CI$ ' <<@' @I' EG' 5<' F9' ;<E6B8: 0' @B' =8A @' B8D C8@B7@A' = CI J :B $ 4:<F' 5;7 ' F<F8@5" ' J' @<5;7@A' <>' J ; 5' ; B' ; GD G8@8B'5<' 5;8' :8 5' <>' 5;8' G :59$) 75;' 'A<<B' B8 6' <>' 5:<E=68' ' ECC88B8B'7@' 5E:@7@A' :<E@B$;8' G88B' <>' 5;8' ? 6 @C;8' 7@C:8 8B' : G7B690' @B' =8><:8' 6<@A' ')" ' C<?8:8B'EG' J75;' @<J$ ' J ' E>><C 57@A' J ;8@' ' EBB8@69' C F8' 5<' 5;8' E:> C8' A 7@$ 'J ' <@' ' J ?8'<>'5;8' ? 6 @C;80' @B' J' 75' =8><:8' F8' ' ' J ' C ::78B' B<J@$ 5' J ' 5;8' F< 5' J>E6' 7A;5' ' 8?8:' J$;8' ;8 B' <>' 5;8' ? 6 @C;8' JR ' 6:8 B9' 5' 5;8' G<5' J ;8:8' J8' ; B' F B8' <E:' 6 5' ; 65$;8' ;8 B' 6<@8' J 'G:8C8B8B' =9' ' 5;7CI' C6<EB' <>' @<J BE 50' 5;8' :8 5' <>' 5;8' ? 6 @C;8' J 'C68 :$:<E@B' F8' ' ;8 :B' 5;8' ;<::7B' ;7 7@A' <>' 5;8' @<J0' @B' > :' =8><:8' F8' 5;8' 5;E@B8:7@A' <>' 5;8' ><:8F< 5' G :5' <>' 5;8' ? 6 @C;8$ <' G:8D ?8@5' F9 86>' 7@I777A' A 7@0' ' F B8' E 8' <>' F9' :F FEC;' 7@' 5;8' F8' J 9' ' J ;8@' J7F F7@A'7@' 5 @B7@A' G< 757<@$ 5'6 5' '@<57C8B' 5; 5' ' J ' F<?7@A' 6<J8:' 0 5;8@' ' J' 5;8' G78C8' <>' @<J'7@' >:<@5' <>' F8' 5<G' 5' <F8' 9 :B R B7 5 @C8' 0 5;8@' 5;8' @<J' 5: 7A;5' =8><:8' F8' 5<GG8B0' @B' ' ;8 :B' <@' '6 :A8'] C 68' 5;8' F8' C:8 I7@A' <E@B' 5; 5' 7 ' G:<BEC8B' J ;8@' ' ;8 ?9'C :5' G 8 '<?8:' >:<S8@' @<J' F' J7@58:$ ' >865' 5; 5' ' 6 <' ; B' 5<GG8B0' @B'7@ 5 @569' 5;:8J'EG' =<5;' :F ' 5<' G:<58C5' F9' ;8 B' 7@' C 8' ' ;<E6B' A 7@' =8' C<?8:8B' EG$ ' ; B' 5<GG8B0' =E5' 5;8' @<J' =8;7@B' F8' J ' 5766' 7@' F<57<@' 0 75 ' G:8 E:8' <@' F9' =<B9' J ' <' 5:<@A0' 5; 5' ' 5;<EA;5' ' ;<E6B' =8' C:E ;8B' 5<' B8 5;$;7 ' 5:8F8@B<E ' G:8 E:8' 6 58B' =E5' ' ;<:5' 57F8' 0 ' J ' C<?8:8B' EG' =9' @<J' C<F7@A' >:<F' =8;7@B' F8$ 9' >7: 5' 7FGE6 8' J ' 5<' 5:9' @B' E@C<?8:' F9' ;8 B' K =E5' 5;7 ' ' C<E6B' @<5' B<0' 5;8' ? 6 @C;8' ; B' >:<S8@' =9' G:8 E:8' 5;8' F<F8@5' 75' 5<GG8B0' @B' ' J ' >:<S8@' 7@$ (;76 5' 5:97@A' ? 7@69' 5<' F<?8' F9' :F 0' ' EBB8@69' =8C F8' J :8' 5; 5' 5;8' ; @B ' ' > :' ' 5;8' J:7 5' ; B' 5;8' > CE659' <>' F<57<@$;8' C<@C6E 7<@' J ' 8 90' 5;89' FE 5' =8' =<?8' 5;8' @<J$ ' 85' 5<' J<:I' ' J866' ' ' C<E6B' 0 75' J ' 57F 80' ><:' ' C<E6B0' @<5' ; ?8' ;86B' <E5' FEC;' 6<@A8:$ 5'6 5' ' J' ' > 7@5' A67F F8:' <>' 67A;5$;8' C:E 5' =<?8' F9' ;8 B' J ' A8557@A' 5;7@@8:0' =E5' ' C<E6B' @<5' :8 C;' 75' @9' F<:8' J75;' F9' ; @B ' ! 5;8' 7B8 ' 5:EC I' F8' 5; 5' ' F 7A;5' G78:C8' 75' J75;' F9' =:8 5;$ >58:' 8?8: 0' 8><:5' ' ECC88B8B' 7@' B<7@A' <0' @B' >865' EBB8@69' ' :E ;' <>' 7:' 5<J :B ' F9' F<E5;$ ' J' 5;8' I9' A 7@' 5;:<EA;' ' 675568' :<E@B' ;<68$ ' B8 B' 768@C8' :87A@8B' :<E@B' F8' 0 ' J ' <' E:G:7 8B' 5<' =8' 5766' 67?80' @B' <' G8: E B8B' 5$5;8' >7: 5' F<F8@5' 5; 5' @<@8' <>' F9' >866<J 7>>8:8:' ; B' E:7?7?8B0' 5; 5' ' B7B' @<5' 8?8@' 5;7@I' <>' ;<E57@A' ><:' 5;8F$ ' 5;8@' F B8' ? 7@' 8><:5' 5<' 8L5:7C 58' F9' :F $

2 2)75 %&)' ( ) ' * &' %+) 66 . 7*

=E5' ><E@B' 75' 7F G< 7=68Ø 5;8' F< 5' ' C<E6B' B<' J ' 5<' !<7@' 5;8' 8@B ' <>' F 9' >7@A8: Ø =E5' 5;89' C<E6B' @<5' :8 C;' 5;8' @<J' @9' 6<@A8:$ >58:' '>8J' F7@E58' ';8 :B' ' F @' ;<E57@AØ J; 5' ':8678>' 75' J '5<' I@<J' 5; 5' ' J '@<5' 5;8' <68' E:?7?<:' 5<' I@<J' 5; 5' G8:; G' ;8' J '@<5' >:<S8@' 7@' @B' C<E6B' C<F8' 5<' F 9' 7 5 @C8' ' ' @ J8:8B' Ø 5;8' ?<7C8' GG:< C;8BØ =E5' 88F8B' E@C8:5 7@' J;8:8' 5<' A<Ø @B' 985' 75' J ' @<J' M!E758' @8 :$ ' 75BB8@' 8LC6 F 57<@' <>' E:G:7 8' ' U8=<5' ; B' 88@' F 9'; @B $ 8' 68 :8B' F 9';8 B' 7@' @' 7@ 5 @5Ø @B' J ' =<E5' 5<' 5:9' @B' CE5' F 8' <E5' C< F G6858690' J;8@' ' J' '>7!<5' =<?8' 5;8' @<J Ø @B' <' @8 :' 5<' F 8' 5; 5' ' C<E6B' 5<EC;' 75' J 75;' F 9' :F Ø 65;<EA;' 5;89' J8:8'@<5' HE758' >:88' 985$ ' 5' <@C8' 5:78B' 5<' F<?8' 5;8' ><<5Ø 75' J ' F 9' G<<:' >:78@BR $ ' G @A' <>' A<@9' ;<5' 5;:<EA;' F 8' ' ' J' 5; 5' 5;8' ><<5' B7B' @<5' F<?8$ <<:' $; B' 6< 5' 8@ 57<@Ø @B' J ' G8:; G' 6:8 B9' B8 B$ U8=<5' B7B' ;7' =8 5' Ø >58:' <F8' 57F8' ;8' J7 ;8B' F8' 5<' ;86G' ;7F Ø <' ;8' >:88B' F 9' :F ' '675568' F<:8' <' 5; 5' ' C<E6B' F I8' E 8' <>' 5;8F $ ' C<E6B' B<' =E5' 675568Ø><:' U8=<5' ; B' 5<:@' 5;8$ L8' >:<F' F 9' ;<E6B8:' ' <<@' ' ;8' ; B' C68 :8B' F 9';8 B' M ' A8@8: 669' C ::9' @' L8' 8G : 58' >:<F' F 9' 6G8@ 5<CI K 5;8' =6 B8' 578B' 5<' 5;8' =865Ø @B' 5;8' ; @B68' 55 C;8B' 5<' 5;8' 68>5' ;<E6B8:N$ 8><:8' C<F 7@A' 5<' F 8' U8=<5' ; B' ;86G8B' % @C8' <E5' <>' 5;8' @<J' Ø ;8' J '697@A' @8 :69' ;<:7S<@5 669Ø @B' J '@<5' FEC;' C<?8:8B' <?8:$ % @C8' ><E@B' 8? :BØ J;<' J ' EG:7A;5' 7@' 5;8' @<J Ø =E5' C<?8:8B' EG' 5<' 5;8' ;8 B$ >58:' =<E5' 5J 8@59' F 7@E58 ' 5;8' 5J<' 6 5 @ F8B' AE7B8 ' C F8' EG$ ' J ' 5' 68@A5;'5 I8@' <E5Ø 5;8' @<J' ; B' 5<' =8' CE5' J75;'5;8' L8' B<J@' 5<' F 9' >885' =8><:8' ' C<E6B' =8' GEU8B' E5$ '>8J' F7@E58 ' >58:' <@8' <RC6<CI' $ $ J8' C F8' 5<' F 9' G<<:' >:78@BR ' > C8$ $ $ $ ' ' J7 ;8B'5;8' =<B9' 5<' =8' 5 I8@' <E5' C<F G6858690' =E5' @<5;7@A' C<E6B' 7@BEC8' 5;8' 5;:88' AE7B8 ' 5<' J<:I' @9' 6<@A87Ø >:<F' 5;8' F<F 8@5' 5;89' J' 5; 5' 75' J ' 5<<' 6 58' 5<' ?8' ;7F $ ' CI@<J68BA8' 5; 5' 5;89' J8:8' @8 :69' '7@C G =68' <>' B<7@A' @95;7@A' ' ' J $);8@' ' J ' 5 I8@' <E5' <>' 5;8' @<J' 5;8' C<:B' ; B 5<' =8' CE5$) 8' 5:78B' 5;8' 8@B' A<7@A' 5<J :B ' 8@@8@Ø =E5' C<E6B' @<5' F<?8' 75' Ø 75' J 8@5' @8 :69' 5: 7A;5' B<J@Ø @B' ;<J8B' E ' 5; 5' 5;8:8' J ' 5;8' A: ?8' <>' 5;8' =: ?8 5' AE7B8' 5;8' (6 7 ' 8?8:' ; BØ @B' 8?8:' J 766' ; ?8$;8' C<6B' ; B' B<@8' 75 ' J<:I' <@' E ' Ø J8' C<E6B' 5 @B' 75' @<6<@A8:Ø @B' =8A @' 5;8' B8 C8@5$3

' - *9' ' .! ! ' " ' Ø , P

k :$ $ $ 8 5;C<58Ø <>' W;7@A><:BØ 8LØ J;76 5' 558F G57@A' 5<' C8@B' 5;8' 558:;<:@' =9' 5;8' <E5;8:@' :<E58Ø J ' E@><:5E@ 586Ø' E 8B' ' '67A;5@7@A C<@D BEC5<:Ø J;8@' ;8' J ' J 75;7@' '>885' <>' 5;8' E F F 75' <>' 5;8' F<E@5 7@$ 5' F 9' =8' <= 8:?8B' 5; 5' 5;8' 558:;<:@' M67I8' 66' 7 <6 58B' 6G7@8' :<CI' E F F 75 M 7 ' >:8HE8@569' 5:EC I' =9' 67A;5@7@A$ 7A@<:' &7<:B @<' ; ' G<7@58B' <E5' 86 8J;8:8' 5; 5' ;8' ><:E7B' @E F 8:<E ' 5: C8 ' <>' 868C5:7C' B7 C; :A8 ' EG<@' 5;8' 5<G' <>' 5;8' F E@5 7@$X5

Z @' .E69' Ø Ø 7@' C<F G @9' J75;' 858:' 8::@Ø 858:' EAJ 6B8:' !E@7<:Ø @B' .< $ HE7A@ S Ø ' C<F F 8@C8B' 5;8' C8@5$;8' 5F< G;8:8' J ' C68 :Ø @B' 5;8' J7@B' <E5;8:69$) ;8@'?8:9' @8 :' 5<' 5;8' E F F 75' @' 8L5:8F 869' 6<EB' 5;E@B8: C6 G' J ' ;8 :B Ø @B' J8' 5;<EA;5' 75' G:EB8@5' 5<' B8 C8@B$) 8' C<F F 8@C8B' 5;8' B8 C8@5' 7@' 5;8' ><66<J7@A' <:B8:[K EAJ 6B8:' >7: 5Ø F 9 86>' @8L50'

P' 88' G$ 1 $ 5' 658 :EER' ' ' 1 ' ' G:76 $

5;8@ 8:F @B H777A@ S 6 5 @ GG:< C;7@A 5;8 <6 B8 48675<758P :8D C87?8B ; :G 57@A7@A =6<J <@ 5;8 68A 0 @57 5;<EA;50 5>7: 505;5 5 5<@8 ; B =88@B7 6<BA8B 0 =E5 6<EB 5;E@B8: C6 G 5 <@C8 5<6B F8 J; 5 75 J $ 8:F 6 < 7B 560 5 ;8 ; B =88@ ;75 <@ 5;8 68A$ @ >8J F<F 8@5 : 8C87?8B ;75 <@ 5;8 :7A;5 :F 0 J;7C; 88F8B 5< :E@ 6<@A 750 @B :8 8F=68B ;<CI >:<F A 6? @7C = 558:9$ 5 5;8 F8 57F 8 66 5;8 F8@ A ?8 5 :568B ;:78I 0 @B 8LC6 7F8B 5; 5 5;89 J8:8 ;75 =9 67A;5@7@A$;8 5<:F C<@57@E8B @8 :E ><: <F8 675568 57F8 0 @B 5;8@ A: BE 669 B78B J 9$ @ ::7?7@A 5 5;8 3 ><E@B 5; 5 8::@; B 6<@A <:8 <@ ;7 :F 0 @8L5 F<:@7@A ;7 68A J FEC; J<668@ @B ?8:9 J8 I$) 8 B8 C8@B8B 5< :876 <@ 5;8 ><66<J7@A B 90 @B C:< 8B 5< V8:F 55$;8 F8 B 9 F9 ; @B =8A @ 5< J866 @B 75 C<@57@E8B ?8:9 J8 I ><: =<E5 J88I$ HE7A@ SR @8CI J F EC; J<668@ <@8 C; 7B8 0 5;8 67A;5@7@A ;755 7@A 0 ;7F M CC<:B7@A 5< ;7 CC<E@5N <@5;8 = CI 0 @B EG<@8 C; 7B8 <> 5;8 @8CI$ EAJ 6B8:R 68A J 6 < 67A;569 J<668@$;8 5;E@B8: J 5:8F8@B<E K 6<EB8: 5; @ ; ?8?8?8: ;8 :B 75 =8><:8$;8:8 J @< J7@B 0 @<: 7@ @B 8?8:95;7@A J 7@ F7 5$3

'$ + " ($ G$ 1 $ $

5 J 5 58B 7@ 5;8 C<F F8@C8F8@5 <> 5;7 C; G58: 5; 5 5;8 <7@58 BC C:7@ J 5;8 ;7A;8 5 F<E@5 7@ 7@ 4: @C8$; ?8 68 :@8B 7@C8 5; 5 G : D A: G; J J :7558@ 5; 5 G5 7@ 78E68 5; B858:F7@8B 5; 5 5;8 ;87A;5 <> 5;8 7AE7668 (8:58 7 0 2 >8850 5; 5 F<E@5 7@ 7 C<@ 8HE8@569 1 >885 ;7A;8:5; @ 5;8 <7@58 B8 C97@ 0 @B 7 5;8 ;7A;8 5 7@ 4: @C8$

$ -) ! " ,

;8 (6 <E:@ @C;8 @ 57?8 J;< 5 :58B 5< > C7675 58 5;8 J 9 EG 5;8 <E5;D J8 5 :7BA8 <> 5;8 558:;<:@ ><: $ &7<:B @< @B 866 0 G75C;8B 5;87: 58@5 EG<@ 5;8 5;7:B G6 5><: F0 5 5;8 ><<5 <> 5;8 &:8 5 <J8: M Q0 Q >885N0 @B 8@!<98B 8?8: 6 B 9 <> = B J8 5;8: E@B8: 75 ;8658: $ @ 5;8 >7: 5 >7@8 B 9 M 5; <> .@69N 5;89 =8A @ 5;87: J<:I 0 @B =<E5 F7BB 9 <@5;8 25;A<5 <@5< 5;8 c ;<E6B8:0R @B ::7?8B 5 5;8 = 8 <> 5;8 >7@ 6 G8 I M5;8 G<7@5 J;8:8 8@@8@ 5<GG8B <@ .E69 Q 0 QN$;8 C<E@ 86 <> 5;8 G :59 J8:djf;8@ B7?7B8B$ J<K .8 @ @5<7@8 ::86 @B .< 8G; HE7A@ SK J7 ;8B 5< A< <@ 0 5;8 <5;8 J8:8 @<5 8 A8: =<E5 75$ B7 CE 7<@ 5<<I G6 C8 @B 5;8 :8 E65 J 5;89 66 C<F F8@C8B 5< B8 C8@B @B J ;76 5 EG<@ 5;8 cC: ? 58 0 M 0 Q2N 5;89 ;8 :B <E: C:78 >:<F 5;8 EF F75$. / G<@ 5;8 5; 5;89 J8@5 B<J@ 5< :876 @B :8G<:58B 5;87: 766 ECC8 5< $ &7<:B @< M 88 G$ QN$; 5 A8@568F @ J @ 5E: 669 FEC; B7 GG<7@58B0 @B G:8 8B 5;8 F8@ 5< 85 <E5 A 7@$ d 7B ;8 Z / @576 @<J ; ?8 5:7?8@ ><: 5;8 ;<@<E:

P 'G6 C8 <@5;8 >7@ 6 G8 I 0 =<E5 6> J 9 =85J88@5;8 c ;<E6B8:R @B 5;8 EF F75$ 5) 8 :8 7F78 ;8:8 5;8 CC<E@5 <> 5;8 G:<C88B7@A <> 5;8 5 67 @ J ;< 5 :58B >:<F :876 <@ 5;8 5; <> .E69 $ 88 G$ $

; ;8 ><:8A<7@A G :57CE6 : J8:8 :86 !+8B 5< F8 =9 .$ $ ::86$

d ;8 ><66<J7@A B85 76 7B8 5 I8@ >:<F 5;8 CC<E@5 <> 5;8 ==8 F8 &<::85 MGE=D 67 ;8B 7@5;8 &* D C5$ N0 J;< J 5 :876 J;8@5;8 F8@ :85E:@8B$

@B' J ;8@' C6< 8' 5<' 5 ;8' :7BA8Ø ><E@B' 5 ; 5' 5 ;89' C<E6B' @<5' C67F =:' <@' 5<' 75' Ø =E5' 5 ;89' G8:C87?8B' 5 ; 5Ø' =9' B8 C8@B7@A' ' AE669' J75 ;' G8:G8@B7CE6 :' 7B8 Ø' 5 ;89' C<E6B' :8 C ;' 5 ;8' :7BA8' 5' '6<J8:' G<7@5$;8' =<6B' ==8' J ' 5 ;8' ;8 ?78 5' @B' 5 ;8' 5:<@A8 5' <>' 5 ;8' ><E:Ø @B' ;8' J ' C:7>7C8B' ><:' 5 ;8' ECC8 ' <>' 5 ;8' 8LG8B7D 57<@$ 8' @B' 89@85' :8F 7@8B' =8 ;7@BØ @B' 6<J8:8B' 5 ;8' <5 ;8: Ø' <@8' =9' <@80' 7@5<' 5 ;8' AE669$ ::86' @B' 7C ;' C6 F=8:8B' EG' 5 ;8' <5 ;8:' 7B80' 55 7@8B' 5 ;8' :7BA8' B8 C8@B7@A' 5<J :B ' 5 ;8' @<:5 ; J8 5Ø ;<:569' >58:J :B ' A 7@8B' @' Z' 8 9' :<E58Ø@' 5 ;89' A 66<G8B0Ø @B' 7@' ' >8J' F7@E58 ' :8 C ;8B' 5 ;8' <E5 ;8:@' 8@B' <>' 5 ;8' EF F75 :7BA8$

;8' 57F 8' <>' 5 ;87:' ::7? 6' B<8 ' @<5' GG8 :' 5<' ; ?8' =88@' @<57C8B$ 5' J ' 6 58' 7@' 5 ;8' B 9Ø ' =8678?8' =<E5' ' " ' ::86' @B' ;7 ' C<F: B8' <@69' J" 758B' 6<@A' 8@<EA ;' 5<' G6 @5' ' >6 A' =9' 5 ;8' 7B8' <>' 5 ;8' C 7:@' 5 ; 5' J8' ; B' =E765' 5 ;:88' B 9 ' G:8?7<E 69Ø' 5 ;8@' B8 C8@B8B' 5' <@C8Ø :8!<78B' 5 ;8' <5 ;8: Ø @B' 66' ><E:' ;E::78B' B<J@' ' > 5' ' G< 7=68' 5<' 5 ;8' 58@5$;89' J8:8' <' G:8 8B' ><:' 57F8' 5 ; 5' 5 ;89' C<E6B' @<5' 8 5' ' @B' 75' J ' ' " ' =8><:8' 5 ;89' ::7?8B' 5' 5 ;87:' C FG' 5' 5 ;8' ><<5' <>' 5 ;8' &:8 5' <J8:$ @' B8 C8@B7@A' 5 ;89' ><66<J8B' 5 ;8' A 668:9' =<?8' F8@57<@8B' 5 ;:<EA ;<E5' 75 ' 8@57:8' 68@A5 ;Ø @B' <' ?<7B8B' 5 ;8' ?8:9' B7>>7D CE65' :<CI ' <?8:' J ;7C ;' 5 ;89' ; B' G 8B' <@' 5 ;8' C8@5$ ' 5 ;89' J8:8' 5: ?8: D 7@A' 5 ;8' 68@A5 ;' <>' 5 ;8' Ć ;<E6B8:' 5 ;89' J75@8 8B' 5 ;8' G ;8@<F8@<@' 5<' J ;7C ;' ' ; ?8' 6:8 B9' B?8:58B' 5' 5 ;8' ><<5' <>' G$ 2 $

) ;8@' ::86' @B' 7C ;' J8:8' @8 :' 5 ;8' EF F75' 5 ;89' J' <E:' 5: C8 ' EG<@' 5 ;8' 558: ;<F A685 C ;8:Ø @B' E G8C58B' 5 ; 5' @' CC7B8@5' ; B' <CCE::8B' Ø 5 ;89' B7B' @<50' ;<J8?8:Ø ;8 :' <>' 5 ;8' 558: ;<:@' C 5 5:<G ;8' E@576' 5 ;87:' :85E:@' 5<' :876Ø 5' ' " ' EG<@' 5 ;8' 5 ;$;8' B85 76 ' <>' 5 ; 5' B' 8?8@5' J8:8' 7@' 5 ;8' F<E5 ;' <>' 66Ø @B' 75' J ' @<5' 7F@ 5E: 669' EGG< 8BØ 7@' 5 ;8' = 8@C8' <>' C<::8C5' 7@><:F 57<@Ø 5 ; 5' 5 ;8' CC7B8@5' J ' ' G:<<>' 5 ; 5' 5 ;8' @<:5 ;8:@' 7B8' J ' >:7A ;5D >E669' B @A8:<E $;8' >8' :85E:@' <>' 5 ;8' ><E:' 5 67 @ ' J ' :8A :B8BØ <@' 5 ;8' <5 ;8:' ; @B0' ' 8?7B8@C8' 5 ; 5' 5 ;8' :876' :<E58' J ' 5 ;8' =8 5$;< 8' J ;<' J8:8' 7@58:8 58B' M875 ;8:' G8: <@ 669' <:' <5 ;8:J7 8M' 7@' 5 ;8' (6' <E:@ @C ;8' F B8' 5 ;8' F< 5' <>' 5 ;8' C7:CEF 5 @C8 Ø @B' 5:EF G858B' 5 ;8' G: 7 8 ' <>' 5 ;8' <E5 ;8:@' :<E58$ <F8' J8@5' > :5 ;8:Ø @B' 7@ 575E58B' C<FG :7 <@ ' =85J88@' 5 ;8' 5J<' :<E58 ' 5<' 5 ;8' B7 B? @5 A8' <>' 5 ;8' @<:5 ;8:@' <@80' @B' J8:8' G68 8B' 5<' 58:F ' <E:' 8LG8B757<@' <@' 5 ;8' 25 ;' <>' . E69' G:8C7G75 58Ø @B' <' ><:5 ;$ <@ 7B8:7@A' 5 ;8' C7:CEF 5 @C8 ' J ;7C ;' C E 8B' E ' 5<' 68 ?8' 5 ;8' (6' <E:@ @C ;8' <@' 5 ;8' Q5 ;' <>' . E69Ø' 5 ;8 8' :8F :I ' J8:8' @<5' 7@' 5 ;8' =8 5' G< 7=68' 5 58Ø =E5' ' ; ?8' @<' >8867@A' :8A :B7@A' 5 ;8F $;8:8' F 9' =8' <F80' ;<J8?8:Ø J ;<' F 9' =8' 7@58:8 58B' 7@' ' C<FG :7 <@' <>' 5 ;8' 5J<' :<E58 Ø @B' ><:' 5 ;87:' I8 ' ' J766' G6 C8' 5 ;8' 8 8@57 6' G<7@5 ' 7@' !EL5 G< 757<@$) 8' M5 ; 5' 7 ' 5 ;8' EAJ F6B8:' @B' F9 86>M' J8:8' = 8@5' >:<F' V8:F 55' ' ;<E: $ LC6EB7@A' ; 65 ' @B' 5<GG A8 ' <>' <@8' <:5' <:' @<5 ;8:Ø 5 ;8' C8@5' @B' B8 C8@5' <CCEG78B' E ' Q ' ;<E: $ V8:F 55' 7 ' ' >885' =<?8' 5 ;8' 68?86' <>' 5 ;8' 8 Ø @B' 5 ;8' 558: ;<:@' 7 ' 2Ø1 ' Ø J8' ; B' 5 ;8:8><:8' 5<' C8@B' 2 ' >885$ ' > :' ' 5 ;8' G<7@5' F :I8B' 0 Q ' >885' 5 ;8' J 9' J ' I@<J@Ø' <' J8' ; B' 5<' >7@B' 5 ;8' J 9' <?8:' <@69' ' >885$ 7:8' F8F=8:' <>' </:' G :59' M ' @<J' 7@C6EB8' 66M' J8:8' ?8:9' E@8HE 6' 7@' =76759Ø @B' @<@8' <>' E ' C<E6B' ><:' ' F<F8@5' =8' C<FG :8B' ' C: A F8@' J75 ;' .8 @ @5<7@8' ::86$;8' ><E:' 5 = @ ' J ;<' 5 :58B' >:<F' :876' <@' + 8' 5 ;' <>' . E69' J8:8' = 8@5"BE:7@A' f ' P' ;8' 7!<:B ' <>' 5 ;8' ==8$ ' 7F A7@8' 5 ; 5' ;8' F8 @5' 9 ' 8 9$

;<E: 0 @B ' > :' ' 'C @ A 5;8:'>:<F'5;8 GE=67 ;8B CC<E@50 @B'>:<F' C<@D ?8: 57<@' J75;'5;8 F8@0 8LC6EB7@A' ; 65 0 5;89'5<<I'><:'5;8 C8@5 @B B8 C8@5 Q f+' ;<E: $;8 ;<586 5 :876 7 ' ' >885 =<?8'5;8 8 0 <'5;89' ; B'5<' C8@B' 1 ' >8850 ' > :' ' 5;8 8@B'<>'5;8 ¢ ;<E6B8:'R5;8 J 9 J 'I@<J@' 5<' ::860 @B' ;8 ; B' 5<' >7@B' 5;8 J 9'<?8:' <@69 =<E5 ' >885$ 66'><E:' F8@' J8:8'=<:@' F<E@5 7@88: 0 A<<B' C67F=8: 0 @B' 5;89' J8:8' 68B' =9'5;8 F< 5' 8LG8:5'C: A F @' '; ?8' 88@$;8 J8 5;8:'7@'8 C;'7@ 5 @C8' J '>7@8$ 5' 7 ' 88@0 5;8:8><:80 5; 5' 5;8 8' ><E:' @8 :69' 8HE 669' F 5C;8B' F8@' 5<<I' ' ' 57F8'5<' C8@B' '>885' ';87A;5'5; @'<E: 86?8 0 65;<EA;'J8'; B'5<'>7@B'5;8' J 9" <?8:' F<:8'5; @'><E:' 57F8 ' ' FEC;' E@5:<BB8@' A:<E@B' '5;89$;7 ' 6<@8' J<E6B'68 B' @9' F<E@5 7@88:'5<' EGG< 8'5; 5;87:' :<E58' FE 5' ; ?8' =88@' F<:8' B7>>7CE65'5; @'<E: $P' 'I@<J'5;8'A:8 58:'G :5' <>'5;8' A:<E@B' <?8:' J;7C;' 5;89'G 8B0 @B'>:<F'F9'I@<J68BA80 @B'>:<F'5;8' CC<E@5' <>' :$ &:<?80' ' F' E:8' 5; 5' 5;87:' :<E58' J '@<5' <@69' F<:8' B7>>7CE650 ;E5' 5; 5'75'J ' 2 $' F<:8'B7>>7CE65'5; @'<E: $

;7'J '@<5'5;8'<G7@7<@'7@'5;8'(6 <E:@ @C;8 5'5;8'8@B'<>' 0 @B' 5;8' @ 57?8 ' C<@>7B8@569' :8CI<@8B' 5; 5'5<E:7 5 ' J<E6B' >6<CI' 5<' 5;87:' 7B8' 7@' G:8>8:8@C8' 5<' 5;8' <5;8:$ 5' J 0 '=8678?80'5;8' @<@' ::86' <>' < 5 'MJ;<' 6J" 9 '5 I8 'A:8 5'7@58:8 5'7@' EC;'F 558: N' J;<'>7: 5'G:<G< 8B'5;8'C<@ 5:EC57<@' <>' ' $ 'EG<@'5;8' <E5;8:@' 7B8' <>'5;8' 558:;<:@$;8'G:<!8C5'J '5 I8@' EG'J75;' G7:750 @B'>E@B '><:'75 '8L8CE57<@'J8:8' G88B769'G:<?7B8B K G:7@C7G 669' =9'5;8'F8F=8:'<>'5;H' 5 67 @' 6G7@8' 6E=0'<:' =9'5;87:' >:78@B $;8'7@B8D > 57A =68' ::86' ><E@B' '@ 5E: 6' ;<68' EG<@'5;8'68BA8' C 668B'5;8'¢C: ? 58'R M 0 Q2N0' @B'5;7 0'7@'C<E: 8'<>'57F80'J '5E:@8B0'E@B8:' ;7'B7:8C57<@0'7@5<' ' :8 G8C5 =68' 675568' ;E5$ 5 'G< 757<@'7 ' EG8:=0' @B' A7?8 ' '?78J'<>'5;8' F< 5' F A@7>7C8@5'C; : C58:$

);76 5'5;7'J<:I'J '=87@A'C ::78B'<E50 F9'>:78@B' :$ $: E>E:B'&:<?8' <@ E658B' F8':8 G8C57@A'5;8' C8@5'<>'5;8' 558:;<:@$ ':8C<F F8@B8B';7F' 5<' C8@B' =9'5;8'@<:5;8:@':<E58' @B' 5<' G6 C8' ;7F 86>'7@'5;8';@B'<>'.8@' @5<7@8' ::860 :$ &:<?8'><E@B0';<J8?8:0'5; 5' ::86 B7 57@C569'G:8>8::8B' 5;8'<E5;8:@'7B80 @B'5;89' C8@B8B' CC<:B7@A69'=9'5;8' :876':<E58$:$&:<?8' ; '=88@'A<<B'8@<EA;'5<' EGG69'5;8'><66<J7@A' CC<E@5'<>';7'8LG8B757<@$ 8' C ::78'<@' F9'B8 C:7G57<@'<>'5;8' <E5;8:@':<E58'>:<F'5;8';7A;8 5'G<7@5' ' 55 7@8B'<@'5; 5' 7B8'M'675568'=86<J'5;8'¢C: ? 58'R5<'5;8' EF F750 @B'5;E' :8@B8:'C<FG6858'F9'B8 C:7G57<@'<>'5;8'5J<' 7B8 $

Y'@' EAE 5' 1' ' C8@B8B'5;8' 558:;<:@'>:<F' :8760'5 I7@A' 'AE7B8' 5;:88' F<E@5 7@88:'<>'5;8'(65<E:@ @C;8K .$ $ ::860 .$ 7C;0 @B' $ 89@850K ::86'=87@A'5;8'68 B8:$ 5' 5; 5'57F8'5;8' 558:;<:@';B'@<5' =88@' C 68B' 7@C8'5;8'>F<E'8LG8B757<@'<>'5;8' 5 67 @' AE7B8'F8@57<@8B' =<?8$

Z' E:':<E58'J '7B8@57C 6'J75;'5; 5'J;7C;'5;89'><66<J8B'7@'5;87:'B8 C8@5' J;8@0 'J766'=8' 88@0'5;89' 5:EC I'<E5'<@'<@8'G :5'<>'5;8'F<E@5 7@' 'B7>>8:8@5' 67@8':><F'5; 5'J;7C;'5;89';"B' 5 I8@'7@' C8@B7@A$' >58:'A 7@7@A'5;8' <6' BE' 7<@0'J8'C67F=8B'5;8' <E5; J8 58:@'<:' :876' 4 '=9'5;8':<E58'J;7C;' ; '=88@'B8 C:7=8B'7@'5;8 8'G A8 0'G 7@A'5;8'>57A;5' 5'5;8'5;8@'E@>7@7 ;8B';E5'C<@

P' ;8'G C8'<>' 'G :59'7' :E68B'=9'5; 5'<>'75'68 5'8>>7C78@5'F8F=8:$

5:EC58B' =9' 5;8' 5 67 @' 6G7@8' 6E=' <@' 5;8' ć C: ? 58$ŔR 5 :57@A' >:<F' 5;8' ;E5' 5' B 967A;50' J8' :8 C;8B' 5' @' 8 :69' ;<E:' 5;8' E F F 75' <>' 5;8' ć ;<?BB8:-' @B' 5;8@' 5: ?8: 8B' 75 ' '5<' 5;8' >7@ 6' G8 I' <>' 5;8' 558:;<:@$' ;8' G A8' <>' 5;7 ' ! ' J ' G8:; G ' 5;8' F< 5' 8@!<9 =68' G :5' <>' 5;8' J ;<68' 8LG8B757<@$' ;8' :7BA80' J<:@' =9' 6<J' 7::8AE6 :' B8C 9' 7@5<' F<@ 5:<E ' @B' :EAA8B' = 5568D F8@5 0' @B' AE :B8B' <@' 8 C;' 7B8' =9' 5:8F8@B<E ' G:8C7G7C8 0' 7 ' A: @B' =89<@B' 66' B8 C:7G57<@0' =E5' B<8 ' @<50' 5: @A8' 5<' 90' G:8 8@5' @9' :8F :I =68' B7>>7CE659' 5<' 5;8' C67F=8:0' ?8' 5; 5' 75' 7 ' 8LC88B7@A69' 5:97@A' 5<' 5;8' ;8 B$' &:8 5' C :8' 7 ' <>' C<E: 8' @8C8 :90' =E5' 5;8' C: F=68' 7 ' =9' @<' F8 @ ' <>' <' :BE<E ' ' @ 5E:8' ' 8@57:869' 5<' = <:=' 5;8' 558@57<@' 0 <' 5; 5' ' >7@8' C67F=0' @B' :<CI' C8@8:90' <>' A: @B8E:' G8:; G ' E@G : 66868B' 7@' 5;8' 6G 0' C @' =<5;' =8' !:G:8C7 58B$

Z' 5' J ' @8 :' 5;8' 8@B' <>' 5;7 ' ! ' C6< 8' 5<' 5;8' G6 C8' J;8:8' 75' =E5 ' A 7@ 5' 5;8' >7@ 6' G8 I0' 5; 5' :<>8 <:' 9@B 66R' G :59' 5E:@8B' 7@' Q0P' ::8 58B' =9' ' C68>5' 7@' 5;8' :7BA8$' 4:<F' 5;8' G<7@5' J;8:8' 5;89' 5<GG8B' 5;8' F 7@' 5<J8:' <>' 5;8' 558:;<:@' :7 8 ' 7@' >:<@5' <>' 5;8' C67F=8:0' =:EG50' F A@7>7C8@50' @B' GG :8@569' 7@ CC8 7=68$' ;8' E F F 75' 7 ' >E669' 1 ' >885' 7@' ?8:57C 6' ;87A;5' =<?8' 5;7 ' G<50' @B' C8:5 7@690' 5<' F 9$898$0' GG8 :8B' 5<' =8' 8G : 58B' >:<F' F8'=9' ' 985' F<:8' C<@ 7B8: =68' 7@58:? 60 ><:' ' :8F8F=8:0' J;8@' 5' 5;8' 8@B' <>' 5;8' ! ' 6<<I7@A' EGJ :B' 5'' 5;8' C:8 5' <>' 5;8' F<7F5 7@0' @B' 5;7@I7@A' 5; 5' 75' F E 5' =8' ' A<<B' ' >885' =<?8' F8$

Y') ;8@' 5;8' 5 67 @' AE7B8 ' F B8' 5;87:' G68@B7B' C8@50' 5;89' 5: ?8: 8B' 5;8' ' <>' 5;8' ;<E6B8:' 5<' 5;8' F 7@' G8 I0' G 8B' 5;8' C68>5' J;7C;' ; '=88@' F8@D 57<@8B' MG$' N0' C6 F=8:8B' <@' 5<' 5;8' 5:8F8@B<E ' @<:5;) 8 58:@' > C8' <>' 5;8' F<E@5 7@' MB8 C:7=8B' =9' :$) ;9FG8:' 5' GG$' ' @B' N0' @B' 5;8@' 8@D B8 ?<E:8B' 5<' C:< '5;7 '> C8' <' '5<' A85' <@' 5<' 5;8' VR E55' ! &' ;8' G A8' <>' 5;7 ' 6<G8' G:<?8B' ' J<:I' <>' A:8 5' B7>>7CE659' @B' B @A8:$' ' J' 75' >:<F' ?8:9' @8 :' 5;8' G6 C8' J;7C;' 5;89' 5: ?8: 8B0' @B' J ' E@ =68' 5<' C<@C87?8' ;<J' @9' ;EF @' C:8 5E:8' F @ A8B' 5<' C: J6' <?8:' :<CI' <' 588G' @B' <' 5:8 C;8:<E $' >58:' 5;89' ; B' A<5' =<E5' ; 6> J 9' C:< 0' 5;89' ><E@B' 5;8' B7>>7CE6578' <>' 5;8' :<E58' @B' 5;8' B @A8:' >:<F'> 667@A' 5<@8' <' A:8 50' 5; 5' 5;89' 5:ECI' 5: 7A;5' EG' 5;8' F<E@5 7@0' 7@' 5;8' ;<G8' <>' >7@B7@A' <F8' >8:' J 9$' ;89' J8:8' 5<' ' C8:5 7@' 8L58@5' ECC8 >E60' ><:' 5;89' C F8' G:8 8@569' 5<' ' F 66' 68BA80' C E 8B' =9' ' <:5' <>' E65' 7@' 5;8' :<CI0' :E@@7@A' ;<:7S<@5 669' C:< '5;8' @<:5; J8 58:@' > C8' <>' 5;8' F<E@5 7@' ' 675568' B7 5 @C8' =86<J' 5;8' EF F75$' : ?8: 7@A' 5;7 ' 68BA80' 5;8' 5 67 @ ' ><E@B' 5;8F 86?8 ' C6< 8' 5<' 5;8' VR E55' ! '$2 ' 5766' 8G : 58B' >:<F' 75' =9' ' = : :78:0' 5<' <E5>6 @I' J;7C;' 75' J ' @8C8 :9' 5<' B8 C8@B' ' G8:G8@B7CE6 :' AE669$' : :86' @B' 7C;' J8:8' 6<J8:8B' B<J@' 5;7 0' 5;8' <5;8:' 5J<' F 8@' :8F 7@7@A' 5' 5;8' 5<G' 5<' ; E6' EG' 5;87:' C<FG @7<@ ' <@' 5<' 5;87:' :85E:@0' ' <5;8:J7 8' 5;89' C<E6B' @<5' ; ?8' A<5' EG' A 7@$' 7@A' <@' 5<' 5;8' VR E55' ' J75;<E5' >E:5;8:' B7>>7D CE6590' ::86' @B' 7C;' C67F=8B' =9' 5; 5' :7BA8' 5<' 5;8' E F F 75' <>' 5;8' F<E@5 7@$' @' :85E:@7@A0' 5;8' 5 67 @ ' I8G5' 5<' 5;8' 68BA8' ><:' 5;8' J;<68' B7 5 @C8' C:< '5;8' @<:5; J8 58:@' > C8' @B' B8 C8@B8B' 5<' 5;8' G6 C8' J;8:8' 5;8' E ' <>' 5;8' ;<E6B8:0' =E5' A 7@ 5' 5;8' F 7@' G8 I' =9' ' <:5' <>' :<EA;' :7BA8' <>' :<CI' =85 J88@' 5;8' @<:5; J8 58:@' @B' <E5;8:@' > C8 $') ;8@' ' C8@B8B' 7@' 10' J8' ><66<J8B' 5;7 ' :<E58' 7@' 5;8' C8@5' @B' 7@' 5;8' B8 C8@5$' '5;<EA;5' 5;8' 68BA8' B7>>7CE650' 7@' <F8' 6 C8 ' B8C7B8B69' B @A8:<E 0' @B' ; E6B' @<5' C :8' 5<' 85' ><<5' <@' 75' A 7@' 0 =E5'

@' 88' GG$' Q 0' @B' GG$' $

_' ' :7BA8' B8 C8@B7@A' 5<J :B ' 5;8' VR @55A685 C;8:$

E:8B69' 75' @875;8:'7 ' <' B75>7CE65' @<:' <'C<@57@E<E 69'B @A8:<E ' '5;< 8'A E@5' @B' G75768 ' :<CI 6<G8 ' J ;7C;' 5;8' 5 67 @ ' C:< 8B'7@' 5;87:' EGJ :B' :<E58$

Z' ;8' C:8B75' <>' F I7@A' 5;8' "/ , ' C8@5' <>' 5;8' 558:;<:@' =86<@A ' E@B<E=58B69' 5<' .$ $ ::86' @B' 5<' 5;8' <5;8:' F<E@5 7@88: ' J ;<' CC<FG @78B' ;7F$ 8@@8@'68B' ;7 'G :59'=: ?869' @B' I76>E669'5<' 'G<7@5' <F8'1 '>885'=86<J' 5;8'5<G$:<F'5;7 ' G<7@50' ;<J8?8:0' A<<B'AE7B8'5;<EA;' ;8'J 0' 8@@8@'; B'5< :857:8' B8>8 58B'0' @B'75' J ' :8 8:?8B'><:'5;8' =8558:' F<E@5 7@ C: >5' <>'5;8' (6' 5<E:@ @C;8' AE7B8'5<' J7@'5;8' B7>>7CE65' J 9'5<'5;8' E F F75' <>'5;8' 558:;<:@$3

:$: E>E:B' &:<?8' J '5;8' >7:5' 5: ?8668:' J;<' C8@B8B'5;8' 558:;<:@' >58:'5;8' CC7B8@50' @B'5;8'@ 57?8 ' <>' (6' <E:@ @C;8' J"8:80' <>' C<E: 80' A:8 569' B867A;58B'5; 5' ;7 ' C8@5' J ' F B8' EG<@'5;87:' 7B8$ <F8' <>'5;8F0' ;<J8?8:0' J8:8' =9'@<' F8 @ ' J866' G68 8B'5; 5'.$ $ ::86' J ' <' FEC;':8A :B8B$;89' >8 :8B0' G8:; G 0' 5; 5' ;8' J<E6B' CHE7:8'5;8' F<@<G<69' <>' 5;8' F<E@5 7@$' .E 5' ' F<@5;' >58:' :$ &:<?8R ' C8@50' 7L' (65<E:@ @C;7 @ ' 85' <E5' 5<' 88' J;85;8:' 5;89' C<E6B'@<5'68 :@'5;8' :<E580' @B' <' C<F8'7@' ><:' ' ; :8' <>'5;8' A<<B'5;7@A');7C;' J8:8' 8LG8C58B' 5<' ::7?8$;89' J8:8'5;::88' HE7A@ SR0' 8 :' ::86' MF 9' <6B'' AE7B8N0' .$ $ ::86' @B' 'B EA;58:' <>' 5;8' 6 5' @ F8B' ' ;89'68>5' :876' 5' ' '<@' 8G5$' G!' @B' 5' ' ' ::7?8B' 5'5;8';E50' J";8:8'5;89'G 8B' 05;8'@7A;5$ 5' 1' '5;8' @8L5'B 9'5;89' 5 :58B' A 7@' M68 ?7@A'.$ $ ::86' =8;7@BN0' @B' G:<C88B8B' 6<@A'5;8'0' ;<E6B8:'R5<'5;8' >7@ 6' G8 I'0 G 8B'5;8' C68>5' J;7C;' ; B' 5<GG8B' 8@@8@0' @B' C6 F=8:8B' EG' 5;8' C<FG :579 B9'8 9' :<CI '<@'5;8'<5;8:' 7B8'E@576' 5;89' ::7?8B' 5'5;8' = 8'<>'5;8'6 5'G:8C7G7C80' B<J@'J;7C;'J8'; B' ;E:68B' 5<@8'<@' .E69' 20' $;89'M9<E@A'J<F @' @B' 66N' J8:8'5;8@' =<E5' '>885'>:<F'5;8' E7F@75''' ;8@0' 7@ 58 B' <>' 5E:@7@A'5<'5;8'68>50' ' ::86' @B' :$ &:<?8' ; B'B<@80'.< 8G;' @B'.$ 78::8' HE7A@ S'G 7B' 558@57<@'5<'5;8'C67>>'7@'>:<@5'<>'5;8F0' @B'F @ A8B'5<'>7@B' F8 @ '<>' G 7@A'EG0' =9'C68>50' 68BA8 0' @B' AE6678 0'5<'5;8' EF F75$;7 ' J ' ;<:58:'M @B'75' GG8 :'5<'=8' @'8 78:N':<E58';5; @';5; 5'5 I8@'=9' ::86' @B' &:<?80' @B'75';'=88@'><66<J8B'=9' 66'5;<8'J;<';' ?8' 7@C8';5;8@' C8@B8B'5;8' F<E@5 7>5'>:<F';5;8' 7B8'<>' :8/$P' E= 8HE8@569'0' ':<G8' J '>7L8B'<?8:';5;8' F<5'B7>>7CE65'G<:57<@'<>';5;8'>7@ 6'C67F=$

@';5;8' F8 @57F8';5;89';' B'@<5'=88@'7B68'EG<@';5;8'<5;8:'7B8$ ';E5'J ' C<@ 5:EC58B'EG<@';5;8' 8 58:@'> C8' 5' ';87A;5'<>' Q0 Q '>885' =<?8';5;8' 8 0' @8 :'5<'5;8'C:8 5'<>';5;8' :7BA8' J677C;'B8 C8@B'5<J :B'V8:F 55'M@<:5; 8 5' :7BA8N$;7 'J ' B<@8' 5'5;8' 8LG8@ 8'<>' <@ 78E:' 8768:' @B'<>';5;8' J7 ' 6G7@8' 6E=$ <@ $ 8768:'G6 C8B';5;8' 8L8CE57<@'<>';5;8' J<:I'E@B8:';5;8' B7:8CD 57<@'<>';5;8' U@E=86 0'<>';5;8' ?766 A8'<>' 5$%7C;<6 0'7@';5;8'V8:F 55'? 6689'0' @B' 858:'U@E=860' 6<@A'J75;'.< 8G;' :78' <C;F 558:'<>' 5;8' F8'?766 A80' ; B' 5;8';<@<E:'<>' F I7@A'5;8' 8C<@B' C8@5'<>'5;8'F<E@5 7@' EG<@'5;8'@<:5;8:@' 7B8'J75;' :$ 667<55$;7 ' 5<<I'G6 C8' <@'.E69'Q2 Q 0' $5' 7@C8' 5;8@

P'.< 8G;' @B'.$ 78::8' HE7A@ S' 6<@8' C8@B8B'0 5;8'<5;8:' ; B' ; B' 8@<EA;' @B' :85E:@8B$ 5' ;<E6B';8'<= 8:?8B'5; 5':<G8' ; B' =88@'>7L8B0'=9'.$ $ ::86' @B'<5;8: 0' <?8:' '5;8' B7>>7CE65' G :5'<>'5;8' F<E@5 7@' ;7A;' '5;8' ;<E6B8:0' W '5;8' C8@5'<>' 0'5;8 8'G8:<@ $;7 ' 8LG6 7@'5;8'> C76759' J75;' J;7C;'5;89' F<?8B' <?8:'A:<E@B' J;7C;' ; B' =88@'><E@B'?8:9'5:97@A'7@'8 :678:'57F8 $;8'9<!$EA' J<F @'B8C6 :8B'5; 5'5;8' C8@5'M ' > :' ' ;8' J8@5N' J ' '5:7>68 0' <:' E 8B' J<:B'5<'5; 5'8>>8C5C 7>' ;8' ; B'5:78B'5<'A85'5<'5;8' F8';87A;5'=8><:8' Q0' ;8' J<E6B'G:<= =69' ; ?8'=88@'<>' 'B7>>8:8@5<G7@7<@$

*' 5'J;' EGG< 8B'=9' :$ 667<55'5; 5' ;8' ?<7B8B'5;8'G6 C8' J;8:8'5;8' CC7B8@5

@EF8:<E ' C8@5 ' ; ?8' =88@' F B8 @B' <>' 5;8 8' 5;8' <@69' <@8' J ;7C;' C 66 '><:' F8@57<@' 7 ' 5; 5' ;9' 7A@<:' &7<:B @<' <@' 8G58F=8:' ' $' ;7 ' A8@568D F @' C F8' 5<' :876' 8?8: 6 57F8 ' >58:' ;7 ' > F<E ' ?7 75' 7@' ' J75;' 5;8' 7@58@57<@' <>' F I7@A' 5;8' C8@50' =E5' ;8' J ' 6J 9 '= >>68B' =9' J8 5;8:$ @' . E69' ' ;8' A<5' ' ;7A;' ' 5;8' ¢C: ? 58' MJ75;' .$ $ ::86' @B' <5;8:' F8@N' @B' O ' 1/ 1 '/G1 1'4 H1' ' FG/ ' IH H G,1'/ ' $ H1' 1/G1 ' J' ' O 'W' 5' 6 50' EG<@' 5;8' =<?8 @ F8B' B 580' ;8' J ' =68' 5<' A: 57>9' ;7 ' B8 7:8 0' @B' CC<F G67 ;8B' 5;8'>8 5' <>' C8@B7@A' 5;8' F<E@5 7@' EG<@' <@8' 7B8' @B' B8 C8@BD 7@A' 75' EG<@' 5;8' <5;8:$ 7A@<:' &7<:B @<' 7 0' ' =8678?80' 5;8' <@69' A8<6<A7 5' J ;<' ; ' C8@B8B' 5;8' 558:;<:@$ 8' G8@5' ' C<@ 7B8: =68' 57F8' 7@' 5;8' 8L F7@ D 57<@' <>' 75 ' 5:EC5E:80' @B' =8C F8' =8@7A;58B' <@' 75 ' 8 58:@' > C8' 7@' C<@ 8HE8@C8$ ' F' 7@B8=58B' 5<' ;7F' ><:' 5;8' ? 6E =68' @<58' @B' 5;8' CC<FG @97@A' 8C57<@' J;7C;' ><66<J' 5;8' =68' <>' C8@5 $P

;8' 5J<' 5 =68 ' EG<@' GG$ 2QQ Q ' 8LG6 7@' 5;8F 86?8 $' ;8' >7: 5' 8L;7=75 ' 5' ' A6 @C8' 66' 5;8' 558FG5 ' J ;7C;' J8:8' F B8' 5<' C8@B' 5;8' 558:;<:@'=8><:8' . E69' 0' J";85;8:' =9' @ 57?8 ' <:' J ;85;8:' =9' 5: @A8: F 58E: '0 @B' 5;8' 8C<@B0' 66' <>' 5;8' C8@5 ' J ;7C;' ; ?8' =88@' ' 6 :A8' @EF=8:' <>' > 76E:8 $' ; ?8' =88@' C<FG8668B' 5<' <F75' 66' F8@57<@' <>' 5;8' 6 558:0' F8:869' <@' CC<E@5' <>' 5;87:' @EF=8:$ &:8 5' 5:<E=68' ; '=88@' 5 I8@' 5<' F I8' 5;8' ><66<J7@A' 5 =68 ' CCE: 58' 0 =E5' 75' 7d0' <>' C<E: 80' G< 7=68' 5; 5' <F8' @ F8 ' ; ?8' =88@' <F7558B' J ;7C;' ;<E6B' ; ?8' =88@' 7@ 8:58B$

¢ ;8' C8@5 ' ; ?8' =88@' 8HE 669' B7?7B8B' =85J88@' 5;8' 5J<' :<E58 $' ;8' @<:5;8:@' <@8' 5766' :8F 7@ 0' ' =8678?80' !E 5' J ; 5' 75' J ' 7@' 0' J75;' 5;8' 8LC8G57<@' <>' 5;8' ;E5' =E765' EG<@' 5;8' 8 58:@' > C8$' ;8' <E5;8:@' :<E580' ;<J8?8:0' ; ' =88@' :8@B8:8B' ?8:9' FEC;' 8 78:' =9' 5;8' :<G8 ' J ;7C;' ; ?8' =88@' G6 C8B' <?8:' 66' 5;8' B7>>7CE65' G6 C8 $' 5' 7 ' @<5;8:' 5;7@A' J ;85;8:' 75' 7 ' 1 ' 5; @' 75' J $' /@68 ' ' A:8 58:' F<E@5' <>' EG8:?7 7<@' 7 ' A7?8@' 5<' 5;8 8' :<G8 ' 5; @' ' 8LG8C5' J 766' =8' A7?8@' 5<' 5;8F0' @B' E@68 ' 5;89' :8' :8G6 C8B' >:<F' 57F8' 5<' 57F8' =9' @8J' <@8 0' 5;<9' J 766' =8' 67I869' 5<' :8@B8:' 75' F<:80' : 5;8:' 5; @' 68 0' ; S :B<E $' @' K / ' 5;8:8' 7 ' @<J' G:<= =69' 675568' <:' @<' B7>>8:8@C8' =85J88@' 5;8' :<E58 $' (8:9' G<<:' C67F=8:' ' F 9' F I80' @B' ; ?8' F B80' 5;8' C8@5$ %<?7C8 0' 7@' F9' <G7@7<@0' <EA;5' 5<' =8' 7@? :7 =69' B858::8B' >:<F' 558FG57@A' 750' @B' 7>' 75' 8?8:' =8C<F8' > ;7<@ =68' M67I8' 5;8' C8@5' <>' <@5' 6 @C0' ><:' 8L FG68N0' 5;8' F< 5' B7 5:<E ' C<@ 8HE8@C8 ' F 9' =8' @57C7G 58B$

<CCE::8B' <@' . E69' 20' 0' @B' 7FG:<?8B' 5I8' :<E58$ 5;8:' J ;<' ; ?8' F B8' 5;8' C8@5' ;9' 5;8' @<:5;8:@' :<E58' ; ?8' 5;<EA;5' 5;8' F 80' ;E50' ' > :' ' 'C:@' 68 :@' 5;8:8' ; '@<5' =88@' @9' F 58:7 6' B8?7 57<@' >:<F' 5;8' :<E58' J8' 5<<I' <?8:' 5;8' F 66' B7>>7CE65' G :5' <>' 5;8' F<E@5 7@0 @B' F9' 7@><:F 57<@' 68 B ' F8' 5<' =8678?80' 5;5' F< 5' <>' 5;<8' J ;<' ; ?8' C8@B8B' <:' B8 C8@B8B' 5;8' @<:5;8:@' :<E58' ; ?8' G 8B' <?8:' 5;8' 8L C5' G6 C8' J ;8:8' 5;8' CC7B8@5' <CCE::8B$

P' 7A@<:' &7<:B @<' C ::78B' ' F8:CE:7 6' = :<F858:' 5;:<EA;<E5' 5;8' 8@57:8' B7 5 @C80' @B' :8 B' 75' >:8HE8@569$ 7' <= 8:? 57<@' ; ?8' 8@ =68B' F8' 5<' B858:F7@8' J75;' C<@>7B8@C8' @B' CCE: C9' 5;8' ;87A;5' J ;7C;' J8:8' 55 7@8B' EG<@' 5;8' B7>>8:8@5' 558FG5' 5<' C8@B' 5;8' F<E@D 5 7@0' @B' 5;8' ? :7<E ' G<7@5' EG<@' 75' J ;7C;' ; ?8' =88@' <' >:8HE8@569' F8@57<@8B' 5;:<EA;<E5' 5;7' ?<6EF8$ 8' 68>5' ' F7@7FEF' 567 :F<F858:' EG<@' 5;8' EF F75' 7@' $' ;7' J ' :8C<?8:8B' ;9' .$ $ F6' 7@' .E69' 0' @B' J ' ><E@B' 5<' :8A7 58:' <@69' ¬ 4 ;:877;875' =86<J' 5;8' >:88S7@A' G<7@5$ 5' J ' EGG< 8B' 5; 5' 75' J ' G:<58C58B' >:<F' 5;8') 7@58:' C<6B' ;9' ' B88G' C<?8:7@A' <>' @ J$;8' 8LG6 @ 57<@' 7 ' C :C869' 57 > C5<:9$

$. ' ' ' ' 2 < ! ' ' , ' :' -! '

4$ 2! ' @A8@78E:' 8@' ;8>' B8 ' 7@8 ' BR65 6780' 85C$' 85C$

8' 558:;<:@' <E' <@5' 8:?7@' 8 5' >8:7@8' B8G777 ' 6 ' = 8' !E H@R E' <F F 85' B8' :<C;8 ' 5: 57>7>88 ' 8@' = @C ' 8S' :8AE678: 0' HE7' <775' 5<@ ' 68A8:8 F 8@5' :868?8 ' ?8:' R 50' ?<7:' ?8:' 68' <@5' < 8$ 8 ':<C;8 'HE<7HER8?7B8 F F 8@5' BR<:7A7@8' 8B7 F 8@5 7:8' <@5' E@8' 5:EC5E:8' ><:58 F 8@5' C:7 5 667@8' HE7' B<75' 85:8' R8>>85' BRE@8' GE7 @58' C57<@' B8' F 85 F<:G;7 F 8' 5:8 B8?86<GG88' B @ ' C8558' :8A7<@' B8 ' 6G8 $ ' @ ' 6 ' 8:78' B8 ' :<C;8 ' C<@ 575E @58 ' BE' <@5' 8:?7@' <@' G8E5' > 7:8' E@8' B7 57@C57<@' 8S' F :HE880' ?<7:' C8668 ' ><:F @5' 6 ' = 8' 7@>8:78E:8' B8' 6 ' F<@5 A@80' 85' C8668 ' ><:F @5' 68' G78' G:<G:8 F 8@5' B75$

8 ':<C;8 ' B8' 6 ' = 8' HER<@' ?<75' B @ ' 68' (6' <E F @C;80' B @ ' 68' ? 66<@' B8' VR 7:55' E' C<6' B8' ;8<BE68' 85' 7668E:0' <@5' 8@' A8@8: 6' B8 ' C;7 58 '5 6HE8ELO' 8:G8@57@8ELO' C;6<:758ELO' 85' F G;7=<67HE8 0' 658:@ @5' ><:5' <E?8@5' ?8C' B8 ' C;7 58 ' C 6C 7:8 ' ' @<98 EL' HE :5S8EL$' j 8 ' C;7 58 ' C 6C 7:8 ' B8' C<@68E:' =:E@ 5:8' 658 F 8@5'"H ' 85' 6 ' ?8C' B8 ' B<6<F 78 0' B8 ' C :AE8E68 0' 85' B8 ' HE :5S758 ' 58AE6 7:8 $ 8558' ><:F 57<@' C 6C :8< 8:G8@57@8E 8' 8 5' 5:8 ' 858@BE8' B @ ' 68 ' 8@?7:<@ $ 8' G78' E' C<@5: 7:8' 8 5' 5<E5' ><:F 8' BRE@' A@87 ' 5 6HE8ELO' <E?8@5' ' A:< ' 868 F 8@5 0' 658:@ @5' G :><7 ' ' HE86HE8 ' = @C ' B8' C;7 58 ' 5 6HE8EL' 85' HE :5S8ELO' F 7 ' @ ' = @C ' C 6C 7:8 $ (8: ' 68' G78B' <E8 5' BE' G7CO' 68' A@87 ' 8 5' :8 F G6 C8' G :' B8' R8EG;<57B8' A: @75<7B8' F 7?80' HE7' 8 F =68' 9' ><:F 8:' E@8' A7R< 8' 68@57668' 8' ><@B @5' B8' 5<@ ' C<5B ' B @ ' 68' A@87 ' F B F 8$ ' E' :8 58' 68 ' :<C;8 ' BE' 8:?7@' F<@5:8@5' G :5<E5' B8 ' 8L8 F G68 ' ><:5' 7@ 5:EC57> ' B8' G A8 ' A: BE86 ' BRE@8' 5:EC5E:8' $' R E5:80' Y:8 E65 @5' BE' F 85 F<:G;7 F 8' G6E ' <E' F<7@ ' ? @C8$

8' G7C' C5E86' @R8 5' HE8' 68' :8 58' BRE@8' GE7 @58' ><:F 57<@' A8<6<+HE8' @C78@@80' 5:7 7HE8' G8E5 85:80' B<@5' 68 ' C<EC;8 ' GE7 @58 ' B8' G6E ' B8' F 85:8 ' 8@?86<GG 78@5' 5<E5' E5<E:' C<F F 8' E@' 7F F 8@ 8' F @58 E' 68' A: @B' F 7>' A: @75<7B8' 85' >86B G 5;7HE8' BE' <@5' < 8$ E 7' <@' 85EB8' B85 766880' HE7' G :' 8LC8G57<@' 8 5' :8@BE8' ><:5' > C768' G :' 6 ' G:<><@B8E:' B8 ' ? 66<@ ' BR<E' ' E:A750' B<@@8' 6 ' C68>' B8' 6 ' 5:EC5E:8' A8<6<A7HE8' B8' =8 EC<EG' BR E5:8 ' F<@5 A@8 ' B8 ' 8@?7:<@ $ @' 9' ?<75' G :5<E5' 68' G;8@<F>8@8' 8S' CE:78EL' BRE@8' GE7 @58' ><:F 57<@' 5 6HE8E 8'5:>8 C:7 5 667@80' G:8 HE8' A: @75<7B80' :8AE678:8 F 8@5' EG8:G< 88' ;' E@8' ><:F 57<@' C;7 58E 8' 85' C 6C :7>8:8$ 8558' F 8 F 8' C<@ 575E57<@' A8<6<A7HE8' 8 5' 8@' G :578' 6 ' C E 8' B8' 6 ' ><:F 8' 7AE8' 85' B8' R7 <68 F 8@5' BE' G7C' HE7' 8@' ><@5' 6 ' F 8:?87668' B8 ' ?<9 A8E: $ @' 8>>850' 5 @B7 ' HE8' 68 ' :<C;8 ' >8E7668588 ' B8' 6 ' = 8' B5 @5' > C768 F 8@5' C<::<B88 ' G :' C57<@' B8 ' F 858<:8 ' 85' B8' 8 7' <@5' +58' > C768 ' F 8@5' C:8E 88 ' 8@' ? 6688 ' 6 :A8 ' 85' G:<><@B8 0' 6 ' :<C;8' EG8:78E:8' HE7' C<@ 575E8' 6 ' G9: F 7B8' B<@@8' 678E' G :' 'BE:858' 'B8 ' >8@B7668 F 8@5 ' ><:F @5' B8 ' G :<7 ' 8 C :G88 ' HE7' C<@ 8:?8@5' E' G7C' C8' G:<>76' 86 @CB' 85' C : C58:7 57HE8' 6G7@$' 8 ' A6 C78:' HE7' 8@5<E:8@5' <@' G78B' B8' 5<@ ' 68 ' C<5B ' 8@' 8 F G<:5 @5' BRE@8' F @7>8:8' C<@57@E8' 68 ' B8=:7 ' 5<F = @5' B8' 8 ' >6 @C 0' C<@5:7=E8@5' G<E:' 68E:' G :5' ;' F 7@ ' 58@7:' 885' 7 <68 F 8@5' B8' 6 ' F 8:?87668E 8' G9: F 7B8' HE7' @ ' 8EL' 8: 75' G8E5 85:8' M>8! ' 8@ 8?8678' <E ' 8 ' G:<G:8 ' F 7@8 $

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$' &@87 '5 6HE8EL' H77 :5S768:8$ 8 EC<EG' B8' 5: C8 ' B8' ><EB:8 $
$' @C' B8' 2' F85:8 ' B8' C;7 58 ' 8:G8@57@877L' 85' 5 6HE8EL' ?8:5 $
$' &@87 '5 6HE8EL' ' 68F8@5 ' G6E ' <@' F<7@ ' C;7 58EL0' ?8C' HE86HE8' 675 B8' HE :5S758$
g' &@87 ' 85' F7C C;7 5C ' >8::EA7@8EL' ' 868F8@5 ' 5:8 >7@ 0' 8 EC<EG' B8' 5: C8 ' B8' ><EB:8$
$ ' 65 99' 3¼5#6364 3 5;' :59' 9;<9459' 43¼TA5A ' 54 ' :59' .5¼9 459' 5 ' G7659 =6 @C;8 ' 85' A:7 8 $
($ 85758' C<EC;8' B8' C;7 58 ' 8:G8@57@877L0' ?8:5' <F=:8$
$ ' 65 99' 54 = ;39;<945' 3 5;' G7659' TA3#4G .5#59' #AL36559
($ &@87 '5 6HE8EL' '868F8@5 ' C;7 58EL$
($) ' ' ?8:Bi5:80' G<:G;9:<:B8' ' 68F8@5 ' F<98@ $
T$ &@87 ' 5 6HE8EL' A: @75<7B8' ' A:< ' 68F8@5 ' 85' ?8C' B8 ' C:7 5 EL' B8' >86B G 5;$
T$ C;7 58 ' A:7 5:8 $$
T ' 7C C;7 58 ' >8::EA7@8EL$
T $' &@87 '5 6HE8EL' ?8:5' <F=:8$
T ' &@87 ' 85' C;7 58 ' HE :5S8EL0' C<E68E:' ?8:5' C6 7:$
T ($ EG;<57B8' F 7?8' M>86B G 5;' 85' B7 66 A8N' ' &+F8@5 ' C:7 5 667@ ' =78@ B8?86<GG8 0' 5: ?8: 88'G :' B8 '?87@8 'BR8E:758' =6 @C; 5:8$ 8558' G<C;8' ><:F8' E@' = @8' <E' G6E5<5' E@8' 68@57668' B8' G6E ' B8' ' F75:8 ' B8' GE7 @C8' 7@58:C 688' E' A@87 '5 6HE8EL$P
T ($ &@87 '5 6HE8EL' 658:@ @5' ?8C' B8 ' C;7 58 '5 6HE8EL' 85' F7C C8 $
T ($' C;7 58 ' C<FG C58 ' C<E68E:' ?8:5' C6 7:$
T ($' 6C 7:8' C:7 5 667@' F7< C8' MC 6C C;7 58N' ?8C' ?87@8 ' 85' :<A@<@ ' B8' HE :5S$ ' 658:@8' ?8C' B8 ' C;7 58 ' ?8:5 ' C;6<:758EL' 85' 8:G8@57@877L$
$ ' ;<9459' 5#49' ;<¼7#45A ' ;95#I5646 5A ' 54 43¼TA5A ' ;3 5;' :59' =39959 57 5758E 8 $
T T$ 6C C;7 58 ' MC<FF8' C7 B8 E N' ><:F @5' E@' = @C' B8' G6E ' B8' F85:8 $ Y
' ;<9459' 5#49' ;<¼7#45A
TT ' 6C C;7 58 ' MC<FF8' C7 B8 E N$
TT $' ' E75' C7' B8 <E ' E@8' B:78' ><:5' GE7 @58' B8' C;7 58 ' ?8:5 ' 8:G8@D 57@8EL0' C;6<:758EL0' 5 6HE8EL' 85' 58 5758EL' 658:@ @5' 8@C<:8' ?8C' B8 ' C 6C C;7 58 $' @' G6E$ 78E:' 6<C 6758 ' 68 ' C;7 58 ' B8?78@@8@5' 5:8 ' FG;7=<6<A7HE8 ' ' G8575 ' C:7 5 EL' @<7:$' $ 8558' GE7 @58' ><:F 57<@' C 6C :7< 8:G8@57@8E 8' :8G< 8' 7@>8:78E:8F8@5' E:' B8 ' F7C C;7 58 ' 85' B8 ' A@87 ' @C78@ $

A' "" ' ('& " ' "' " "' ' 'K ' "' ' (' ' '(' ', '" ' W B ' ' "' ' '" "' ' ' ' (' "' ' ' "' ' '& '" W N* "' ' ' (" ' ' - !' ("" ' Y ' (('(' " ' 'K (' "' ' " ' ' J !' '(& ' '&$ ' "' 'W "Y " *

2Q 4 "(!' ! ' 4 ' (! 66 . 7*

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66' 5;8' G:7@A' <>' 0' 5;8' 6 58' :7@C7G 6' .$' '$' 4<:=8]E:A8B' F8' 5<' 8@B8 ?<E:'5<' >7@B' <E5' F<:8' =<E5';5;8' ¢?87@8B' 5:EC5E:8'R <>'A6 C78: 0' J;7C;';8' 5;8@0' @B0' ' =8678?80' E@576' ;7 ' B8 5;' C<@ 7B8:8B0' J ' ?8:9' FEC;'7@' J @5' <>' 86EC7B 57<@$' >58:';5;7@I7@A';5;8' E=!8C5' <?8:0' 75' 88F8B' 5<' F8' 5; 5' 75 ' B7>>7D CE6578 ' J8:8' <' C<@ 7B8: =68' 5; 5' 75' J<E6B' =8' E 868 ' 5<' 558FG5'5<' A: GG68' J75;';5;8F'8LC8G5'7@' ';5;<:<EA;'F @@8:0' @B' 5; 5' 75' J<E6B'=8' @8C8 :9'5<' C:E57@7 8' @B' 5<' ><66<J' <E5';5;8' A: BE 6' 5: @ 757<@' <>' @<J' 7@5<' A6 C78: 7C80' >:<F'=8A7@@7@A'5<' 8@B0' 7@' 5' 68 5' <@8' A6 C78:$ EG8:>7C7 6' 8L F7@ 57<@' J ' 6F< 5' J<:5;68 0' ><:' 75' J ' J866' I@<J@' 5; 5' 5;8' ?87@8B' 5:EC5E:80' <:' 5:EC5E:8 0' 8L7 58B' 7@' A6 C78: 7C8' =<?8';5;8' @<J 67@8' 0' @B' ;8@C8' 75' GG8 :8B' 5; 5' 5;8' <@69' 8>>8C5E 6' G:<C8BE:8' J<E6B' =8' 5<' 7@I' ' @EF=8:' <>' G75' <:' 5:8@C;8'5;:<EA;' 5;8' EG8:7@CEF=8@5' @<J0' C<F F8@C7@A' 5' 5;8'?8:9'=7:5;D G6 C8' <>'5;8' A6 C78:0' @B' J 5C;7@A'75 'A:<J5;' @B' 5:EC5E: 6' B8?86<GF8@5R '75' B8 C8@B8B'5<'5;8' 6<J8:' :8A7<@ $;7 '<G7@7<@' ' 5766' 8@58:5 7@$

' 68>5' @A6 @B' 5' 5;8' 8@B'<>' .E69'0' J75;'5;8'7@58@57<@'<>' 7@I7@A' 8?8: 6' G75 '7@';5;8' 5<CI'A6 C78:0' J;7C;' B8 C8@B '5<J :B';5;8'@<:5; 8 5' >:<F';5;8' <6' B8' (6G8667@8$P'] @';5;8' >7: 5' 7@ 5 @C8' 75' J ' B8 7: =68' 5; 5' ' 5:8@C;' ;<E6B'=8'F B8'7@' <F8'G< 757<@';5; 5' J '>:88'>:<F'6<C 6' 7@58:>8:8@C80' @B'7@' 5;7 ' :8 G8C5' 5;8' <6' B8' (6G8667@8' J ' @' 8LC8668@5' 5 57<@$' 5' J ' ' @<J9' G6 58 EK 6F< 5' 'G6 7@' MJ75;<E5' @9' G:<5:EB7@A' :7BA8 ' <:' :<CI NK J;7C;' A ?8' =7:5;' 5<' 5J<' A:8 5' A6 C78: K <@8'M5;8' 5<CI'A6 C78:M' B8 C8@B7@A' A8@569' 5<J :B';5;8'@<:5; 8 50' 5;8' 8C<@B'M5;8' (6G8667@8' A6 C78:M' > 667@A' J 9' :5;8:' F<:8' : G7B69'5<'5;8' <E5; J8 5$) :85C;8B' J8 5;8:' @B' F7 8: =68' J<:IF8@' :85 :B8B'5;8' J<:I0' @B' <@69'<@8' G75' J ' E@I'7@' 5;8' 57F8' 5' F9'B7 G< 6$ $;7 ' J ' '675568' F<:8' 5; @' QQ' >885'7@' B8G5;'0' @B0' 65;<EA;'75' 5;:8J' C :C869' @9'67A;5'EG<@'5;8'?87@8B' 5:EC5E:80' 75' 9786B8B' <F8' 7@><:F 57<@':8 G8C57@A' 5: 57>7C 57<@'<>' @<J' @B'5;8'><:F 57<@'<>'A6 C78: 7C8$' 'J766' B8 C:7=80'>7: 5'<>' 660' ;<J'5;8'J<:I'J 'B<@80' @B' 8C<@B690' J ; 5'J8'<= 8:?8B$

' 5:7?8B' 5' V8:F 55' <@';5;8' 5;' <>' .E690'G< 8 8B'<>' 'G7CI L8'M<@8' 8@B'<>'5;8';8 B'G<7@58B' @B'5;8'<5;8:' BS8 ; G8BN' @B' 'C<EG68'<>' ;<?86'0' 8@A A8B';5;88'C<F F<@'G8 @5' '6 =<E:8:0' @B'4: @S' 78@8:' 'AE7B80' @B' J 758B' <F8'B 9'><:';5;8'J8 5;8:'5<'E@G:<?8$' @';5;8' >58:@<<@'<>' EAE 5'Q' J8' 5 :58B0' @B'C FG8B'<@';5;8':<CI'<>'5;8' 5<CI!805' 5' ';87A;5'<>' =<E5' '>885$' 5' J ' '?8:9'AE 59' @7A;50' @B' @<J'>866' ;8 ?769$ &:8 5' ? 6 @C;8'G<E:8B'B<J@'7@C8 @569'>:<F';5;8' E::<E@B7@A' 6<G8'7@5<';5;8' = 7@'<>'5;8' 78>8@F 558@'A6 C78:0' @B' F7@<:'<@8'>:<F';5;8' 6<G8'<>'<E:' 58@5$')8'68>5'<E:'C FG' 5' $Q ' ' <@';5;8' B0' @B'G:<C88B8B'5<';5;8' EF F75'<>'5;8' <6'M 0 N' A 7@ 5' '=7558:69'C<6B'J7@B0' @B'J75;'5;8'C6<EB' 8F=:C7@A'8?8:95;7@A$' 'F :I8B'<E5''G6 C8'><:'8LC ? 57<@0'7F F8B7 5869' 5' 5;8' EF F75'<>'5;8'G 0'_' Q2'>885'6<@A'=9' 'J7B80' @B'5;8'F8@' <<@';8J'<E5' 8@<EA;' @<J'5<' G:<58C5';5;8F 86?8' >:<F';5;8' J7@B$' J<' J 66' <>'5;8' G75

P' 88' F G'<>'5;8' (6G8667@80'85C$

_' :I8B' '5;8' F G' '' 558:;<:@' EB75'A6 C78:0' + "' M N$

m' ;8'G75' J 'F B8' =<E5'F7B J 9'=85J88@'5;8' +58' 6 @C;8' @B'5;8'@ F868 'G<7@5 F :I8B'<@'5;8''E><E:'F G' 'F85:8 $

J8:8' B:8 8B' 5<68: =69' F<<5;0 ' 5;7:B' J ' 68>5' :<EA;0 @B' 5;8' ><E:5;' J ' <CCEG78B' =9' @' 7@C67@8B' G6 @8' 5; 5' 68B' >:<F' 5;8' E:> C8' 5<' 5;8' J<:I8: $ J<' F8@' J8:8' 6J 9 ' 5' J<:I'0 <@8' ;8J7@A' J75;' 5;8' G7CI0' @B' 5;8' <5;8:' 5;:<J7@A' <E5' J75;' 5;8' ;<?86$;8' <5;8: ':8 58B0' @B' :8678?8B' 5;8' J<:I8: ' =<E5' 8?8:9' >7>588@' F7@E58 $ 4<:' 8?8@' <:' 87A;5' >885' B<J@' 5;89' A<5' 6<@A' : G7B690' '5;8' 5E>>' C<E6B' =8' 5;:<JR@' <E5'0 =E5' >58:' '57F8'5;8'G:<A:8 '=8D C F8' FEC;' 6<JF:0><:'5;8' @<J' ; B' 5<' =8' C ::78B' <E5'7@' = I85 $

>58:' ' ;<E: R 8LG< E:8'5<'5;8' J7@B' @B' B:7>57@A' @<J' 'JE' ; 6>'>:<S8@0' @B'7@' 'FEC;' J<: 8' 5 58'5; @';5;8' F8@0' J;<' I8G5'5;8F 86?8' 67?8' =9'5;87:' J<:I$ 66' <E:' > C8' J8:8' F 8B' J75;' 7C7C68 $ 5'68@A5;' '=8 5' ':85:8 50' @B'B8 C8@B8B' 5<' 5;8' 58@5' J75;' 78@8:$;8' F7 5' J8:8' <' B8@ 8' 5; 5' J8' B :8B' @<5'E 8' 875;8:' ?876 '<:' G8C5 C68 0' @B' 'J ' @<J =67@B' 7@' C<@ 8HE8@C8' ><:' 5J<' B 9' >58:J :B $ @';5;8' F<:@7@A' <>' 5;8' 25;' F9R' 89F67B' :8>E 8B' 5<' <G8@0' @B' 5;8' 67A;5' J ' G 7@>E6' 8?8@' J;8@' 5;89' J8:8' C6< 8B$;8' F8@' 5 :58B' <>>' 5' $2 0'68 ?7@A' F8' J75;' F9';8 B'578B' EG'7@' '; @BI8:C;78>0' E@ =68' 5<' 8 5'<:'8?8@'5<' F<I8' ' 78@8:'C F8' = CI' 5' 2$ 'GF @B' :8G<:58B'5; 5'5;8']@<?? 88F8B'5<'=8' A8557@A' <>58:' :5;8:'5; @' ; :B8:'5;8'> :5;8:'5;89'B8 C8@B8B$' @' 5;8' 5;' M E@B 9N' F9'C<@B757<@' J ' 67A;569'7FG:<?8B0' @B' <@' <@B 9' F<:@7@A' 'J ' =68'5<' F I8' ' 5 :50' @B' C8@B8B' 5<'5;8' <6' 5<' 88' J;5' 5;8'6 =<E:8:' ; B' B<@8' 7@' F9R = 8@C8$;89'C8:5 7@69' ; B' @<5' <?8:J<:I8B' 5;8F 86?8 '0><:' J;768' <@' 5;8' >7:5'B 9'5;89' ; B' A<5' B<J@' F<:8' 5; @' '>885' 7@' ';<E:0' 5;89' ; B0' BE:7@A' 5;8' 57F8' ' ; B' =88@' J 90' <@69' CC<FG67 ;8B' 2' >885' F<:8$;89' 7B' 5; 5' <@' E@B 9'@7A;5' '>885' <>' @<J' ; B' B:7>58B' 7@5<' 5;8' G750' @B' 6F< 5' 'FEC;' <@' 4:7B 9'@7A;5$;7 0' <>'C<E: 80' ; B' C<@D 7B8: =69' BB8B' 5<' 5;8' J<:I$;89' J8:8' 8L5:8F869' @L7<E'5<' A85' J 9'0 J;7C;' J '@<5' E:G:7 7@A0' '5;8' J7@B' J '=6<J7@A' >8:<C7<E 69' >:<F' 5;8' @<:5; JR8 50' @B' J '58 :7@A' J 9' ;885' <>' @<J'>:<F' 5;8' EF F75' <>' 5;8' G $ 5' J '7FG< 7=68'5<' 5 @B' A 7@ 5'750' @B' 7@' ' 7@A68';<E:' J8' ;<E6B' ; ?8' =88@' 66' >:<S8@' 7>' J8' ; B' :8F 7@8B' EG<@' 5;8' E:> C8$ '5<6B' 5;8F' M: 5;8:'!8 E757C 669N' 5; 5'5;89' ; B' <@69'5<' :8 C;'A6 C78:0' @B' 5;8' J<:I' J<E6B' =8' <?8:' 5' 5; 5' G<5$;7' C<@ <68B' 5;8F0' @B' 5;89'G:<F7 8B'5<' J<:I' ; :B' BE:7@A'<E:' = 8@C8$

78@8:' @B' 'G 8B'5;8'@7A;5'<>'5;8' 5;' 5' :8: 98@0' @B' EG<@'5;8' 15;' J8' J8@5' B<J@'5;8' (6G8667@8'5<' 7<@ 'EG<@' <5;8:';@ 7@8 $ @'5;8' 5;')R8 :8D 5E:@8B'5<'5;8' EF F75' <>'5;8' <60' @B' ><E@B' 66' 5;:88' F8@' 7557@A' <@' 5;8' @8 :8 5' :<CI' F<I7@A' 5;87:' G7G8 $;89' BF7558B' 5; 5' 5;89' ; B' B<@8' @<5;7@A'<@' 5; 5'B 90';E5'8LCE 8B'5;8F 86?8'=9' 97@A'5; 5'5;89' ; B'A<5'B<J@' 5<' A6 C78:$ '><E@B'5; 5'5;8' J:85C;8' ; B' <@69'A<@8'B<J@' @<5;8:'><<5'BE:7@A' <E:'5;7:59 7L' ;<E: R = 8@C8$ 9' J: 5;0' ;<J8?8:0' J ' <F8J; 5' GG8 8B' J;8@' 'J8@5'B<J@' 7@5<' 5;8' G75$;89' ; B' 5:EI' '6 98:' <>' 7C8' <>' FEC;' A:8 58:'5;7CI@8 '5; @' @9' J;7C;' ; B' =88@' G:8?7<E 69' F85' J75;' 5' 8L58@B8B' 66' :<E@B'5;8'>6<<:' <>'5;8' G75'5<' 'B8G5;'<>' 0f'7@C;8 $;8' F8@' J8@5'5<' J<:I' A 7@0' @B' <<@':8 C;8B' @<5;8:' 5: 5EF'<>' 7C8' <>' ><:F7B =68'5;7CI@8 '0 <:0' : 5;8:0'5;:88'6 98:' 'J;7C;' J8:8'= :869' 8G : 58B'>:<F'8 C;'<5;8:$ >58:'5;7 0' 5;8' @<J' 88F8B'5<' ;8' @<' B8@ 8:'+ @'75' J ' =<?8'5;8'A:8 5'6 98:$ 'J 758B' <F8'57F8'0 ;E5' F9'898' J8:8' 5766'?8:9' J8 I0' @B' C<E6B'$@<5' =8' 8LG< 8B'><:' F @9' F7@E58'5<A85;8:0' <' 5' 68@A5;' 78@8:' @B' 'J8@5' B<J@'5<' V8:F 55' 5;:<EA;' '58::7>7C'5;E@B8: 5<@;' @B' ?8:9' ;8 ?9': 7@$

@' 5;8' 5;' J8' :85E:@8B' A 7@'5<'5;8' <60' @B' J ;76 5' C67F=7@A'56!8' :<CI ' <>' 5678' 5<CI!80' B7 C<?8:8B' 5;8' B8 B' C; F<7 ' J ;7C;' J ' F8@57<@8B' EG<@' G$ $' 5' : 7@8B' ' > :' ' <E:'C FG0' @B' 5;8@C8>:<: J :B' J8' ; B' 5<' >7A;5'<E:' J 9' 67G' 5;:<EA;' C<@57@E<E 69' > 667@A' @<J0' A 7@ 5' @' 8 58:69' A 68$' 5'=68 J' B8 B' 7@' <E:' 5885;0' @B' <E:' G:<A:8 ' J ' G 7@>E6669' 6<J$' ;8' @<J' J ' J:75;7@A' 66' :<E@B0' ' 7>'5<:F8@58B'0 <:' C EA;5' =9' J ;7:6J7@B 0' @B' 8@5' 8BB97@A' ;7A;' 6<>50' <:' 87S8B' =9' AE 5 ' @B' ;<F8' <@J :B ' 7@' C6<EB ' J ;7C;' 88F8B' 5<' =8' B:7?8@' :7A;5';:<EA;' E $' ;8' EB@B' J ' GG 66;7A'0 <@C8' ' J ' > 7:69'=6<EF' B<J@0' 65;<EA;' 578B' 5<' 78@8:0' @B' F @9'57F8 ' J8' J8:8' 8@5' 5 AA8:7@A'= CI' ><:'58@' <:' ' B<S8@' G C8 ' A 7@ 5' <E:' J766$' E:' 5: CI' J ' <=6758: 58B' 5' 5;8' EF F750' @B' J8' C<E6B' @<5' >7@B' 5;8' G75' 5 ' 5:78B' 8 50' J8 50' @<:5;0' @B' <E5;0'5<' @<' GE:G< 80' 5' 6 5')8' ;8 :B' ' ;<E5' 5 ' ; 658B0' G @57@A' ><:' =:8 5;$' @<5;8:' 5' C F8' J75;' 5;8' J7@B0' @B' J8' ; B' 5<' > C8' 5;8' 5<:F' A 7@$' >58:' '6<@A' 8 :C;' J8' ::7?8B' 5' 5;8' G750' J ;7C;' =9' 5;7 ' 57F8' J ' ' ;EA8' ;<68' 5J8@59' >885' B88G$' ;8' 7@C67@8B' G6 @8' ; B' ; B' 5<' =8' = @B<@8B0' @B' ' :8AE6 :' 5 7:C 8' 68B' B<J@' 5<' 5;8' =<55<F$' ;8' F8@' ; B' A 7@' 5:EC I' J<:I0' ; ?7@A0' 5;89' 7B0' ::7?8B' 5' A6 C78:'0 5;8' > C5' J 0' 5;89' J8:8' C<FG6858 69' C<J8B' =9' 5;8' J"8 5;8:0' @B' ; B' 5 I8@' 5<' ;<E57@A0' 8LG8C57@A' 5; 5' J8' ;<E6B' =8' 6< 5$' ' B8 C8@B8B0' @B' J75;' 5J<' 5:<I8 ' <>' 5;8' G7C I' J8@5' 5;:<EA;' 5;87:' A6 C78:'0 J ;7C;' J ' <@69' @<5;8:'5;7CI' 5: 5EF' <>' 7C8$

;8' 6 5' B 9' ; B' ::7?8B0' @B'5;8' @8L5' J '5<' 88' F8' ' 2 '><:' <@B<@$' B:<?8' 5;8' F8@' 5<' 5;87:' J<:I0' @B' 5<<B' <?8:' 5;8F' <@C8' F<:8$' ;8' 5E>' J ;7C;' C F8' EG' 7@'5;8' = I85' J 'B7>>8:8@5' 5<'5; 5' J ;7C;' ' ; B' 88@' 6 5' 5' J '@<5' 7C8' <>' 'C<FG C5' I7@B' 67I8' 5;8' ;<:7S<@5 6' 6 98: 0' 5766' 75' J '@<5' @<J$' <F857@78 '<@8' C<E6B' 9$' ;7 '7 ' @<J' 0 =E5' 5' <5;8:' @<' <@8' J<E6B' ; ?8' 7B' 5; 5' 75' J ' @<J$' @' 7@HE7:90' 5;89' 7B' 5; 5' 75'; B' =88@' 67I8' 5;7 '><:' 8?8: 6' >885$' ')8@5 B<J@0' 5<<I' 5;8' 5<<6 ' 7@' F9' <J@' ; @B 0' @B' ;8J8B' 5;8' J 66 ' F<<5;$' 5' J ' 5;8@' GG :8@5' 5; 5'?8:57C 6' A6 C7>7C 57<@' M7>' ' F 9'=8' G8:D F7558B' 5<' E 8' EC;' @' 8LG:8 7<@M' ; B' C<F F8@C8B' M 88' ' '<@' 8C57<@N$

;8' F8@' J8:8' @L7<E ' 5<' 68 ?80' ><:'5;8' J8 5;8:' J ' 58::7=68$' ;8' J7@B' ;<J68B' <?8:'<55:' ;8 B '7@' '5:E8' ;E::7C @8$' J ' E@J7667@A' 5<' A<' E@576' 75' J ' = <6E5869' @8C8 :9$' 5' 68@A5;'5;89':8>E 8B' 5<' J<:I' @9'6<@A8:'0 'C<@D C6EB8B' 5;8' F8 E:8F8@5'0 J8' 578B' 7@' 67@80' @B' >6<E@B8:8B' B<J@J :B 0' @B' 5' ' G$ $ ::7?8B' 5' V8:F 55$

' J766' @<J' G:<C88B' 5<' B8 C:7=8' J ; 5' J8' J$P' <:' ' 7@C;8 ' >:<F' 5;8' E:> C8' 5;8' @<J' J" ' <>5' @B' J ;758' <:' J ; 5' 7 ' E E 669' 58:F8B' ' @<J$' ;8:8') '5;8@' '?8:9' B8C7B8B' 7@C:8 8' 7@' B8@ 759' @B' 66' 5;8' @<J' =8@8 5;' ; B' ' 67A;5'=6E7 ;' 57@5$'>' 5' Q ' 7@C;8 ' >:<F' 5;8' E:> C8' 5;8' 5<@8' <>' 5;8' @<J' 88F8B' <F8J ; 5' B88G8:' 5; @' 5; 5' J ;7C;' J ' =<?80' =E5' =86<J' 5;7 ' G<7@5' 5;8:8' J ' 675568' <:' @<' 7@C:8 8' 7@' C<6<E:' E@576' 5;8' B8G5;' <>' ' >885' J ' G 8B$' ;8' B8@ 759' <>' 5;8' @<J' @ 5E: 669' 7@C:8 8B' ' J8' B8 C8@B8B0' 65;<EA;' F EC;' 68 ' : G7B69' 5; @' ' 8LG8C58B$' ' <J@' 5<' 5;8' B80+5;' <>' '.' >885' M<:' 5<' !E 5' =<?8' 5;8' =:< B' =6E8' = @B' <@' 5;8' :7A;5 ; @B' 7C<6EF@' <>' 5;8' 8C57<@M' 5;8' F ' J ' B8C7B8B69' @B' E@F7 5 I =69' 9 C' 5; 5' 7 ' 5<' 90

P' ;8' :8 B8:' 7 ' @<J' :8>8::8B' 5<' 5;8' 8C57<>5' 5' 5;8' 8@B' <>' 5;8'?<6E7F+' B: J@' 5<' C 68' <>' <@8' 7@C;' 5<' ' ><<5' >:<F' C5E 6' F8 E:8F8@5$

5' <FG :8B' J75;' 5;8' ' 7@C;8 ' <>' @<J' 5' 5;8' E:> C80' 5; 5' =8@8 5 ' 88F8B' B7:59$' ;8 75 580' ;<J8?8:0' 5<' 58:F' 75' B7:59$') 8' B7B' @<5' @9J;8:8' B858C5' A:75' <:' @B$

6EFG ' C<E6B' :8 B769'=8' C<FG:8 8B' =85J88@' 5;8' ; @B $;7 ' J ' 6 <' 5;8' C 8'7@' <F8'G6 C8 ' $ 9'5;8'B8G5;' <>' ' >885$ 4<:' 8L FG680 5' ' 0' <@'5;8' 8C57<@0'5;8' @<J' J ' @<5' G8:C8G57=69'B8@ 8:' 5; @' 75' J ' 7L' <:' 87A;5'>885' ;7A;8:' EG$ @' <5;8:' G6 C8 0' ' 0' 75' C<E6B' @<5' =8' 58:F8B' @<J9'0 75' C<E6B' @<5' =8' :8 B769' C<FG:8 8B' 7@'5;8' ; @B ' 0 @B' 75' 6<<I8B' @B' >865' 67I8' @' 7FD G8:>8C5' <:' J85' @B' G<@A9'><:F' <>' 7C8$;8' C<6<E:' 5' ' J ' G8:C8G57=69' 5:<@A8:' 5; @' 5' ' 0' =E5'75' ;<E6B' =8' 7B' 5; 5' 5;8' C<6<E:' ;8:80' @B' <>' 5;8' 67<:7S<@5 6' 5: 5 ' <>' 7C80' ; ' =88@' 7@58@57<@ 669'8L AA8: 58B' EG<@' 5;8' 8C57<@' ><:' 5;8' I8' <>' C68 :@8 $

;8'8@57:8'F ' J ' G8:? B8B' J75;' ;<:7S<@5 6' 5: 5 ' <>' GE:8'7C8$ @' 5;8' QQ' >885' 5; 5' J8'G8@85: 58B' 5;8:8'J8:8'1 ' EC;'6 98: 0'? :97@A' >:<F' <@8 58@5;' <>' @' ;7C;' 7@' 5;7CI@8 '5<' 7@C;8 0' J ;7C;' F<E@58B' 7@' 5;8' AA:8A 58' 5<' Q f' 7@C;8 ' <>' <67B' 7C8$;8 8' 5: 5 ' J8:8' G : 6686' 5<' 5;8' E:> C8' <>' 5;8' @<J0' @B' 5<' 8 C;' <5;8:$ %<5'G8:>8C569' <' 0 <F857F8 ' 5;89' GG:< C;8B0' @B' <F8D 57F8 ' :8C8B8B' >:<F' 8 C;' <5;8:$ %875;8:' J ' 5;87:' E= 5 @C8' M5;7CI@8 N' C<@ 5 @5$ @' <F8' G6 C8 ' 5;89' J8:8' F<:80' @B' 7@' <5;8:' 68 ' 5;7CI$ 4<:' 8L FG680 5;8' 5: 5EF' J ;7C;' 7 ' =85J88@' 5;8' =: CI85 ' F :I8B' 2' ^ @B' 2 'Q J ' 7@' <F8' G6 C8 ' @' 7@C;' @B' ' ; 6>' 5;7CI0' =E5' 7@' <5;8: ' C :C869' @' 87A;5;' <>' @' 7@C;$ /G<@' 5;8' J ;<680' 5;8' 5<E58:' 5: 5 ' J8:8' C<@D 57@E8B' C<FG6858 69' :<E@B' 5;8' 7B8 ' <>' 5;8' G750' @B' J8:8' 5<68: =69' E@7><:F' 7@' 5;7CI@8 $;8'>7@8:' 5: 5 0' <@' 5;8' <5;8:' ; @B0' >:8HE8@569' B78B' <E5' 7@' ;<:5' B7 5 @C8 0' @B' 86B<F' <:' @8?8:' C<E6B' ;8' 5: C8B' C<FG6858 69' :<E@B' 5;8' J 66 $;8' >7@8:' 5: 5 ' 6 <' J8:80' FEC;' F<:8' @EF8:<E ' 5<J :B ' 5;8' E:> C8' 5; @' 5<J :B ' 5;8' =<55<F' <>' 5;8' G750' @B' 5;89' J8:8' :8 B769' <= CE:8B' =9' 5;8' B:7>57@A' @<J$ 5' J ' <=?7<E 0' 985' 7FG<:5 @5' 5<' <= 8:?80' 5; 5' 5;8' 5: 5 ' <:' 6 98:' <>' GE:8' 7C8' =8C F8' >8J8:' 7@' @EF=8:' ' <@8' B8 C8@B8B0' @B' 5; 5' 5;89' C<@ 5 @5690' 65;<EA;' @<5' :8AE6 :690' =8C F8' 5;7CI8:$

' 558FG58B' 5<' A 7@' @' 7B8 ' <>' 5;8' 58FG8: 5E:8' <>' 5;8' @<J' 5' B7>>8:8@5' B8G5; 0' =E5' ' B<' @<5' C :8' 5<' HE<58' F 9' :8 B7@A 0' ' 5;89' J8:80' J75;<E5' ' B<E=50' > 6 7>78B' =9' 5;8' J7@B$ ' F' @<5' E:80' F<:8<?8:0' 5; 5' 75' 7 ' G< 7=68' E@B8:' @9' C7:CEF 5 @C8 ' 5<' <=5 7@' C<::8C5' :8 B7@A ' <>' @<J' 58FG8: 5E:8' 0' @9;<J0' FE 5' ; ?8' =88@' 7@>6E8@C8B' =9' 5;8' E::<E@B7@A' 7:$ >' 5;89' J8:8' C<::8C5' 5;89' G:<?8B' 5; 5' 5;8' 6<J8:' 5: 5 ' J8:8' J :F8:' 5; @' 5;8' EGG8:' <@8 $

) 8' FE 5' @<J' HE75' 5;8' :8A7<@' <>' > C5 0' @B' B8 C8@B' 5<' 5; 5' <>' E:F7 8 ' @B' C<@!8C5E:8 $;8' B7>>8:8@C8 ' 7@' 5;8' HE 6759' @B' 7@' 5;8' 5<@8' <>' 5;8' @<J' <>' 5;8' >7: 5' 5;:88' >885' =86<J' 5;8' E:> C8' J8:8' E>>7C78@569' F :I8B' 5<' EAA8 5' 5; 5' J8' J'7@' 5;8F' @<J' =86<@A7@A' 5<' 5;:88' B7>>8:8@5' 98 :+$;8' E@ @7F<E ' <G7@7<@' <>' 5;8' ><E:' F8@' J 0' 5; 5' 5;8' EGG8:F< 5' ' 7@C;8 ' =86<@A8B' 5<' 0' 5;8' @8L5' ' 7@C;8 ' 5<' 2 0' @B' 5;8' @8L5' ' 7@C;8 ' 5<' 2$ @' 5;7 ' F 558:' 5;89' J8:8' @<50' G8:; G 0' 65<A85;8:' 7@C<FG858@5' !EBA8 $ ' F' B<E=5>E60' ;<J8?8:0' J";85;8:' 5;87:' <G7@7<@' J ' C<::8C50' @B' 7@C67@8' 5<' 5;8' 7B8 ' 5; 5' 5;8' EGG8:F< 5' ' 7@C;8 ' ; B' > 668@' BE:7@A' 5;8' EF F8:' <>' 0' @B' 5; 5' 5;8' ECC88B7@A' ' 7@C;8 ' ' ; ?8' =88@' 66' 5; 5' :8F 7@8B' <>' 5;8' G:8C8B7@A' J7@58:R' +!<J$) ; 58?8:' E:G:7 8' F 9' =8' >865' 5' <' F 66' ' B8G5;' =87@A' C<@ 7B8:8B' ' :8G:8 8@57@A' '98 :R' > 660' F E 5' =8' F<B7>78B' J ;8@' 75' 7 ' :8F8FD =8:8B' 5; 5' 5;8' G< 757<@' 5' J ;7C;' 5;8' G75' J ' E@I' C<E6B' C :C869' ; ?8' =88@' F<:8' 8LG< 8B$) 8' ; B' 8?7B8@C8' 5; 5' ' F8:8' >: C57<@' <@69' <>' 5;8' @<J' 5; 5

>866' :8F 7@8B' ' 2K 5678' J7@B' 5<:8'75' J 9'7@' ;885 ' @B' $5:8 F $' 5' J766' ;8' :8F8F=8:8B0' 5<<0'5; 5' @<'7@C<@ 7B8: =68' F<E@5'G 8 ' <>' =9' 8? G<: 57<@$' >' <5;8:' G75 ' ; B' =88@' E@I' 5<' 5;8' @<:5;' @B' 5<' 5;8' <E5;' <>' 5;8' G 0' J8' ;<E6B' G:<= =69' ; ?8' ><E@B' 7@' 5;8F' ' A:8 58:' B8G5;' <>' @<J' =85J88@' 8 C;' <>' 5;8' ;<:7S<@5 6' 6 98:' <>' GE:8' 7C8$;7 ' 7 ' F8:8' C<@!8C5E:80' @B' 75' F 9' =8' 5 I8@' ><:' J; 5' 75' 7 ' J<75;$ 5' 7 ' F<:8' 7FG<:5 @5' 5<' @<58K $ / 0' ; 5' 5;8' >7@8' 6 98:' <:' 5: 5 ' <>' GE:8' 7C8' J8:8' 2 2 ' 5<J :B ' 5;8' E:> C8' 0' #$0 V ' ' J8' B8 C8@B8B' 0' M:N' @B' 5; 5' 5;8' 6<J8:' 5: 5 ' J8:80' EG<@' 5;8' J; <680' FEC;' 5;7CI8:' 5; @' 5;< 8' 5<J :B ' 5;8' E:> C8$' Q$' ; 5' 5;8' 5;7CI@8 ' <>' 5;8 8' 5: 5 ' <>' GE:8' 7C8' F<E@58B' 5<' @8 :69' <@8 58@5;' <>' 5;8' F ' 5; 5' JR8' J8:8' =68' 5<' G8@85: 58$' $' ; 50' =86<J' 5;8' B8!75;' <>' ' >8850' ?8:57C 6' A6 C7>7< 57<@' =8A @' 5<' ;<J' 75 86>$' ∫ /G<@' 8 C;' <>' 5;8 8' E=!8C5 ' ' J766' @<J' ?8@5E:8' 5<' <>>8:' ' >8J' :8F :I $ ' M $N' $ 'G ' $ _ ' ' ' ' &' 2 ' ' 9 ' 2 2 ' 9 ' $ ' 2 & ' 66' <>' 5;8 8' 6 98:' ; B' =88@' ><:F8B' =9' J8 5;8:7@A' ' 5;8' E:> C8$' 5' 7 ' E E 60' 8?8@' BE:7;A' 5;8' J7@58:0' ><:' C<@ 7B8: =68' G8:7<B ' <>' >7@8' J8 5;8:' 5<' ECC88B' ;8 ?9' @<J > 66 ' 0' @B' 7@' 5;8 8' G8:7<B ' 5;8' E:> C8' <>' 5;8' @<J' 7 ' 658:@ 5869' F8658B' @B' :8>:<S8@0' @B0' 5' 68@A5;0' 7 ' A6 S8B' J75;' ' C:E 5' <:' >76F' <>' GE:8' 7C8$;7 0' J;8@' C<?8:8B' EG' =9' @<5;8:' @<J > 660' @B' 8LG< 8B' ' 7@' 5;8' 8C57<@0' GG8 : ' ' =6E7 ;' ;<:7S<@5 6' 67@8' B: J@' 5;:<EA;' 5;8' J;758:' F $' ;8' @<J' =85J88@' @9' 5J<' <>' 5;8 8' 6 98:' M@8 :' 5;8' E:> C8N' B7B' @<5' 5;8:8><:8' :8G:8 8@5' ' 98 :R' @<)0' =E5' 75' J ' 5;8' :8F@ @50' @B' <@69' 5;8' :8FD @ @50' <>' ' C<@ 7B8: =68' > 660' =85J88@' J;< 8' B8G< 757<@0' @B' 5; 5' <>' 5;8' @8L5' 5: 5EF' =<?80' ' C<@ 7B8: =68' 7@58:? 6' <>' 57F8' ; B' G:<= =69' 86 G 8B$ M $N' $ '& ' ' ' ' 9 ' ' ' 7F A7@8' 5; 5' 5;7 ' J ' ' :8 E65' <>' G:8 E:8' >:<F' 5;8' EG8:7@CEF=8@5' F 0' =E5' ' 68 ?8' 5<' <5;8:' 5<' ;<J' 5;8' 8L C5' F @@8:' 7@' J;7C;' 5;8 8' >7@8:' 5: 5 ' J8:8' A<5' :7B' <>$' ' 75' G< 7=68' 5<' 67HE8>9' =9' 58 B9' G:8 E:8' ' G6 58' <>' 7C8' M 9' <@8 58@5;' <>' @' 7@C;' 7@' 5;7CI@8 N' G6 C8B' 7@' 5;8' 7@58:7<:' <>' ' F ' <>' @<J' 0' J75;<E5' 67HE8> C57<@' <>' 5;8' @<J' ^ MCSN' $ ' 9 ' ' &' 2 ' ' 9 ' 2 ' $ ' 9$ ' $ ' $ ' $ ' 9 ' $ ' 2 & ' ;7 0' B<E=568 0' J ' ' :8 E65' <>' ?8:57C 6' G:8 E:8$' ;8' 5: 5 ' A:8J' E@B8:' G:8 E:8$' E5' J;9' ;<E6B' <F8' A:<J' @B' <5;8:' B7 D GG8 :' ^ ' G:8 EF8' 5; 5' 5;8' &' <@8 ' B7 GG8 :0' @B' 5; 5' 5;8' 5<E58:' <@8 ' A:<J$' @' 75' =8' ;<J@' 8LG8:7F8@5 669' 5; 5' 75' 7 ' G< 7=68' 5<' 67HE8>9' =9' 58 B9' G:8 E:8' ' >7@8' G6 58' <>' 7C8' G6 C8B' 7@' 5;8' 7@58:7<:' <>' ' F ' <>' @<J0' @B' 5' 5;8' F8' 57F80' E@B8:' 5;8' F8' C<@B757<@ 0' 5<' 5;7CI8@' @<5;8:' @B' 5<E58:' G6 58' <>' 7C8' ^ Q$' $ ' $ _ ' ' &' 2 ' ' 2 ' ' $' '' ' ' ' ' = $' &' $' $ ' &' $' ' $ ' 9' ' 5' J ' G8:>8C569' J866' I@<J@' G:7<:' 5<' ' 5; 5' 5;8' EGG8:' @<J ' MJ;7C;' A7?8' =7:5;' 5<' A6 C78: N' J8:8' G8:? B8B' J75;' 5: 5 ' <>' GE:8' 7C80' @B' ' ;< 5' <>' <= 8:?8:' ; B' J:7558@' =8><:8' 5; 5' B 58' EG<@' 5: 57>7C 57<@' <>' @<J' @B' <>' A6 C78:$' 5' F 9' =8' HE8 57<@8B0' ;<J8?8:0' J;85;8:' @9' ; B' @' 7B8 ' <>' 5;8' ?8:9' 7FG<:5 @5' F<E@5' <>' A6 C7>6C ' 57<@' 5; 5' 7 ' 8>>8C58B' =9' EG8:>7C7 6' J8 5;8:7@A0' @B' E= 8HE8@5' 5;7CI8@7@A' <>' 5;8' 5: 5 ' 5;:<EA;' ?8:57C 6' G:8 E:8$' ' 8 :C;' 5;:<EA;' 5;8' J<:I ' <>' 5;8' G:7@C7G 6' J:758:' <@' A6 C78:' ; ' > 768B' 5<' ;<J' F8' 5; 5' @9' G8:<@' 7F A7@8B' 5; 5' <@8 58@5;' <>' 5;8' F 0' <:' @95;7@A' 67I8' 5; 5' F<E@50' J ' C<FG< 8B' <>' 5: 5 ' <>' GE:8' 7C8$

PINNACLES NEAR SAORAS, IN THE VALLEY OF THE DURANCE; FORMED FROM AN OLD MORAINE.

%' T$; " (') (!' ' ! 2

;8:8' :8' 5 J<' G<7@5 ' 7@' :+7!:B' 5<' 5;8 8' ;<:7S<@5 6' 5: 5 ' <>' GE:8' 7C8' 5; 5' :8' J<:5;9' <>' C<@ 7B8: 57<@'0K # 0' ' <8 ' @<5' 5;87:' 8L7 58@C80' @B'8 G8C7 669' 5;8' 8L7 58@C8' <>' 5;8' >7@8' 6 98: ' 5<J :B ' 5;8' E:> C80' C<@C6E 7?8690' B7 G:<?8' 5;8' 7B8 ' 5; 5' 5;8' G:<BEC57<@' <>' A6 C78: 7C8' 7 ' A:8 569' G:<F<58B' =9' 7@>765: 57<@' <>' J 58:' >:<F' 5;8' E:> C8' ^ #30 @' 5;8 8' @$EF8:<E ' 5: 5 ' <>' GE:8' 7C8' M <F8' <>' J ;7C;' :8' <>' EC;' C<@ 7B8: =68' 5;7CI@8 0' @B' 8L58@B7@A' <?8:' 6 :A8' :8 N' =80' 3 ' 7@' 5;8' E= 8HE8@5' G:<A:8 ' <>' 5;8' A6 C78:' 1' >' <0' ;<J' :8' 5;89' <=6758: 58B' ^ :' 7 ' 75' @<5' :8 <@ =68' 5<' EGG< 8' 5; 5' 5;8 8' 5;7CI' 5: 5 ' <>' <67B' 7C8' F E 5' C<@D 57@E8' 5<' 8L7 50' F E 5' C<@57@E8' 5<' 5;7CI8@' 5<B8>' G:8 E:80' @B' F E 5' EGG69' F @9' <>' 5;< 8' G6 58 ' <>' GE:8' 7C8' J ;7C;' :8' 88@ 7@' 5;8' 7F G8:>8C5' 7C8' <>' 5;8' A6 C78:0' @B' J ;7C;' ; ?8' =88@' :8>8::8B' 5<' 5' B7>>8:8@5' 57F 8 ' @B' =9' ? :7<E ' G8: <@ ' ' 5;8' ¢ (87@8B' 5:EC5E:8' ^R

$" 9' $' $' &' X3 & ' $' 6 '9$ $') '$ ' 2 ' ' ' ' ' G 7 '9 '& ' ') 8:8' 5;89' CC7B8@5 6' ^ <:' J 766' 5;89' =8' ><E@B' 5' <:' =<E5' 5;8' F8' B8G5;' 7@' 66' <5;8:' G6 C8 ' ^ @5<' J ; 5' J<E6B' 5;< 8' GG8 : @C8 ' ; ?8' B8?86<G8B' 5' ' A:8 58:' B8G5;' ^) ; 5' G:<BEC8B' 5;8F' ^ ;8 8' HE8 57<@ ' F 9' G8:; G ' =8' @ J8:8B' <@8' B 9' =9' >E5E:8R 7@?8 57A 5<: $' ' C @@<5' @ J8:' 5;8F' 8LC8G5' =9' AE8 8 ' <:' C<@!8C5E:8 $ (< 5' E@ J 7667@A69' ' 68>5' 5;8' 8LC ? 57<@' !E 5' 5' 5;8' 57F 8' J ;8@' 75' G:<F 7 8B' 5<' 9786B' F <:8' ? 6E =68' 7@><: F 57<@' 5; @' 75' ; B' B<@8' G:8?7<E 69' 0' @B' 7@C8' 5;8@' ' ; ?8' @8?8:' =88@' =68' 5<' :8 EF8' 5;8' J"<: I$ ' =8678?8' 5; 5' 5;8' 8LG< E:8' <>' C<@ 7B8: =68' 8C57<@ ' <>' 5;8' 7@58:7<:' <>' ' A6 C78:0' 5' B7>>8:8@5' G :5 ' <>' 75 ' C<E: 80' J"<E6B' 9786B' 7@><: $' F 57<@' <>' 8L5:8F' 8' 7@58:8 5' 0' @B' 5; 5' F<:8' 67A ;5' J"<E6B' =8' 5; :<J@' 7@' EC;' J 9' EG<@' 5;8' B<E=5 ' @B' B7>>7CE6578 ' J ;7C;' 558@B' 5;8' ><: F 57<@' <>' A6 C78: 7C8' @B' 5;8' ¢?87@8B' 5:EC5E:80R 5; @' J 766' 8?8:' =8' 5;:<J F' EG<@' 5;< 8' ?8L8B' E=!8C5 ' =9' 7B68' J @B8:7@A' EG<@' 5;8' E:> C8' <>' A6 C78: ' @B' =9' G88:7@A' 7@5<' C:8? 8 $

6 ' 1 ! ' ! ' ' ' ' ' 1 *

@' 5;8' EF F8:' <>' 0' J ;76 5' J 6I7@A' EG' 5;8' (6689' <>' 5;8' ' 7E @C8' >:<F' <@5' ' EG;7@' 5<' :7 77 <@0' ' @<57C8B0' J+;8@ =<E5' >7?8' I76<F 85:8 ' >:<F' 5;8' 6 558:' G6 C80' <F8' G77F C68 ' <@' 5;8' F<E@5 7@ 6<G8 ' 5<' 5;8' J 8 5' <>' 5;8' :< B$ ' C: F=68B' EG0' @B' ><E@B' 5;8' :8F :I =68' @ 5E: 6' G766 : ' J ;7C;' :8' :8G:8 8@58B' 7@' 5;8' @@8L8B' 8@A: ?7@A$P' ;89' J8:8' ><: F 8B' <E5' <>' @' E@ 5: 57>78B' C<@A6<F 8: 58' <>' A:7559' 8 :5;0' =<E6B8: 0' @B' 5<@8 ' 5; @' ' G6E F GEBB7@A' E E 669' 7 ' J75;' G6E F 0' J ;76 5' >:<F' <5;8: ' 5;8' 5<@8 ' G:<!8C58B' 67I8' 5;8' G7@8 ' >:<F' @' 8C;7@<B8:F$;8' 8 :5;' M<:' FEBM' J ' 8L5:8F 869' ; :B' @B' 58@ C7<E 0' @B' 5;8' 5<@8 0' 8F=8BB8B' 7@' 750' J8:8' 8L5:7C 58B' J75;' C<@ 7B8: =68' B7>>7CE659$;8' FEB' B;8:8B' ?8:9' >7:F69' 5<' 5;8' 5<@8 ' 5; 5' J8:8' A<5' <E50' =E5' 75' J ' :8 B769' J ;8B' J 9' 7@' ' 675568 * 5:8 F' @8 :' 5' ; @B$ @' ' >8J' F 7@E58 ' ' 8L5: C58B' >: AF8@5 ' <>' 98@758 0' F 7C C;7 50' 8?8: 6' I7@B ' <>' 67F 8 5<@8' @B' C<@A6<F 8: 58 0

A' # $' I ' > ' ' ' VK$' T' K - ' "# ' ! ' I ' ' ' ' ' J ' "# ' - & ' ' 1 (# ' # ' I ' ' Y ' ' ' K ' "# ' Y ' ' "# ' # I ' ' "# ' & - &! ' ' J ' / $J ' ' "# ' J ' ' # ' J $' # - ' K ' J ! ' J ' (: K ' ! ' "# ' K # ' I * ' ' ' " J ! ' (' ' (' K $ ' "# ' ' # I ' ' "# ' " " ' # - ' "# &#' "# ' K - ' J ' (' ((' ' "# ' (' I "#' (&! ' ' K - !"# $' # - ' - ' K ' (K ' ' K - ' K ' *

2 Q ! " (!' ! ' 4 ' (! 66 . 7*

@B' <F8' >< 76' G6 @5 ' C; : C58:7 57C' <>' C :=<@7>8:<E ' 5: 5 $' < 5' <>' 5;8' >: AF8@5 ' J8:8' C<?8:8B' J75;' C: 5C;8 0' J;7C;' 5<6B' 5; 5' 5;89' ; B' 5: ?8668B' E@B8:@8 5;' ' A6 C78:$' ;8' FEB' ; B' 66' 5;8' C; : C58:' <>' A6 C78: FEB0' @B' 5;8' ;766 7B8' J ' C<?8:8B' J75;' B:7>5$' 4:<F' 5;8 8' 7@B7C 57<@ 0' @B' >:<F' 5;8' 75E 57<@' <>' 5;8' G7@@ C68 0' ' C<@C6EB8B' 5; 5' 5;89' ; B' =88@' ><:F8B' <E5' <>' @' <6B' F<: 7@8$' ;8' A:8 58 5' <>' 5;8F' J8:8' ' 5<' 1 ' >885' ;7A;0' @B' 5;8' F<: 7@8' ; B' 5;8:8><:8' =88@' 5'68 5'5; 5' ;87A;5$' ' !EBA8B' >:<F' GG8 : @C8 ' 5; 5' 5;8' F<: 7@8' J ' ' >:<@5 6 58:F7@ 6' <@8' <>' ' A6 C78:' J;7C;' ; B' =88@' @' >>6E8@5' <>' 5;8' A:8 5' A6 C78:' 5; 5' ><:F8:69' <CCEG78B' 5;8' (6689' <>' 5;8' 'E: @C80' @B' J;7C;0' BE:7@AR :85:<A:8 7<@0' ; B' F B8' ' 5 @B' EG<@' 5;7 ' ;766 7B8' @8 :' C; $' ;7 ' 6 58: 6' A6 C78:' ; B' >6<J8B' B<J@' ' @ F868 ' ' J;7C;' B8 C8@B ' 5<J :B ' 5;8' $ $ $' >:<F' 5;8' F<E@5 7@' C 668B' EG<@' 5;8' 4:8@C;' &<?8:@F8@5' F G' <F F85' B8' R 9C;<EB ' M 12 N$

@69' <@8' <>' /' 5;8' G7@@ C68 ' 5; 5' ' J' J ' ' =9' ' 5<@8' M ' F 66' <@8N0' @B' ' B7B' @<5' @<57C8' @9' =<E6B8: ' 697@A' 7@' 5;87:' 7F F8B7 58' ?7C7@759' <>' ' 7S8' E>7C78@5' 5<' CC<E@5' ><:' 5;87:' G:<BEC57<@' 7@' 5;8' F @@8:' <>' 5;8' C868=: 58B' G766 : ' @8 :' <5S8@0' ;8' :8 B8: ' <>' 7:' ; :68 ' 98.6R' ' M6 5;' 8B$' ?<6$' 7$ G$' N' J766' :8F8F=8:' 5; 5' ;8' 55:7=E58 ' 5;8' ><:F 57<@' <>' 5;8' <5S8@' G766 : ' C;78>69' 5<' 5;8' G:<58C57<@' J;7C;' =<E6B8: ' ; ?8' >><:B8B' 5<' 5;8' E@B8:D 697@A' F 558:' >:<F' 5;8' B7:8C5' C57<@' <>' : 7@$' ;7 ' 7 ' @<' B<E=5' C<::8C5K 5;8' <5V8@' G7@@ C68 ' :8' F< 569' C GG8B' =9' =<E6B8: ' <>' C<@ 7B8: =68' B7F8@ 7<@ $' @' 5;8' G:8 8@5' 7@ 5 @C8' 5;7 ' B<8 ' @<5' GG8 :' 5<' ; ?8' =88@' 8L C569' 5;8' C 8$' 5F @7@A' J 58:' ; ' CE5' 5;8' F<: 7@8' 7@5<' :7BA8 ' M ;<J@' EG<@' 5;8' J<:I' <>' B8@EB 57<@$' ;8' A:<EG' <>' G7@@ C68 ' ;8:8' >7AE:8B0' =86<@A8B0' 7@' 66' G:<= =76759' 0' 5<' ' :7BA8' J;7C;' ' ; B' =88@' ><:F8B' 7@' 5;7 ' J 90' J;< 8' C:8 50' 7@' C<E: 8' <>' 57F80' =8C F8' ; :G0' G8:; G ' 558@E 58B$' @' EC;' ' C<@B757<@0' ?8:9' F 66' 5<@8 ' EG<@' 5;8' C:8 5' <>' 5;8' :7BA8' J<E6B' <:7A7@ 58' 675568' G7@@ C68 ' 0' J;85;8:' 5;8 8' J<E6B' B8?86<G' 7@5<' 6 :A8:' <@8 0' J<E6B' B8G8@B' E!7<@' 5;8' HE @5759' <>' 5<@8 ' 8F=8BB8B' 7@' 5;8' E::<E@B7@A' F<: 7@8 F 558:$' ' 7F A7@8' 5; 5' 5;8' 6 :A8 5' <>' 5;8' C; ' G7@@ C68 ' <J8' 5;87:' 8L7 58@C8' 5<' 5;8' G<:57<@ ' <>' 5;8' F<: 7@8' <E5' <>' J;7C;' 5;89' :8' ><:F8B' ; ?7@A' =88@' 5EBB8B' J75;' ' A:8 58:' HE @5759' <>' 5<@8 ' @B' F 66' =<E6B8: ' 5; @' 5;8' G<:57<@ ' <>' 5;8' F<: 7@8' J;7C;' ><:F8:69' >7668B' 5;8' A G ' =85J88@' 5;8F0' @B0' <>' C<E: 80' G:7F :769' 5<' 5;8' > C5 ' 5; 5' A6 C78: FEB' 7 ' 8L5:8F869' 58@ C7<E ' J;8@' B:90' @B' 7 ' :8 B769' J ;8B' J 9$' ;E 0' 5;8' G:8 8@5' ><:F' <>' 5;8' G7@@ C68 ' 7 ' C;78>69' BE8' 5<' 5;8' B7:8C5' C57<@' <>' : 7@0' =E5' 5;87:' G:<D BEC57<@' J ' 7 58B0' 7@' 5;8' >7: 5' 7@ 5 @C80' =9' 5;8' C57<@' <>' :E@@7@A' J 58:$

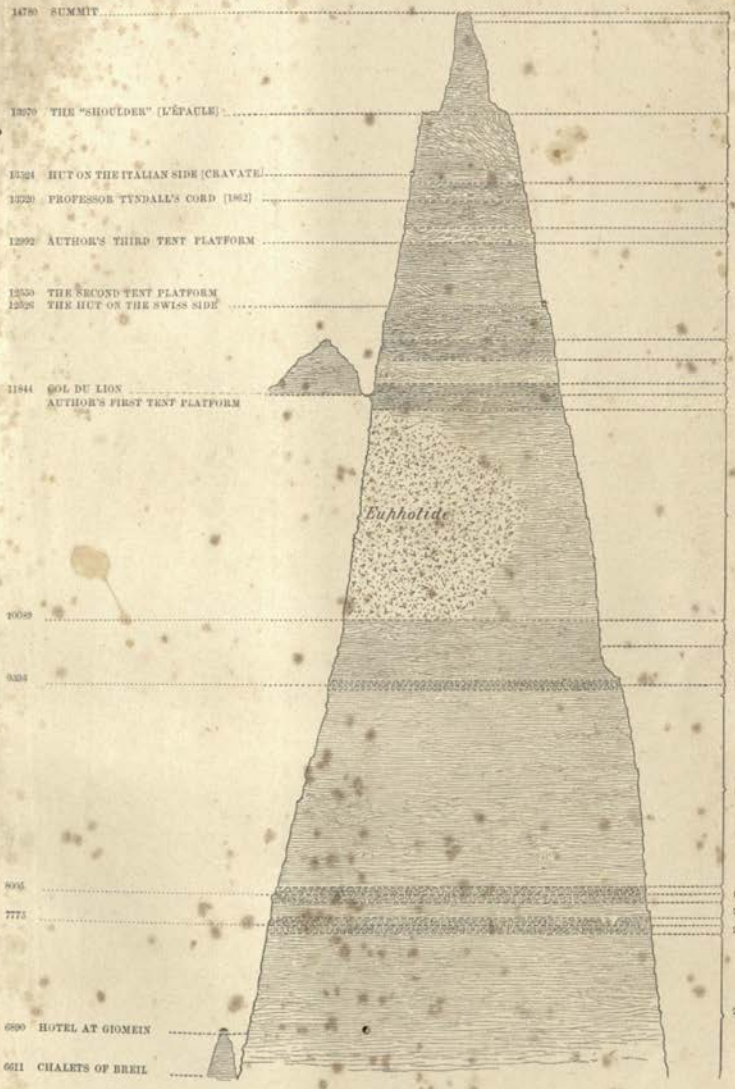
LAKE OF GENEVA
English Miles
French Kilometres
Authors tracks
Railways
Mt Blanc
Mt Cenis
GENEVA
CHAMBERY
GRENOBLE
VIENNE
LYON
ST ETIENNE
ANNECY
MACON
CHALON
AUTUN
MOULINS
NEVERS
BOURGES
ROANNE
MONTBRISON
ST CHAMOND
PUY
ALBERTVILLE
MODANE
ST JEAN DE MAURIENNE
ST MICHEL
BRIANCON
GAP
DIE
VALENCE
MONTELIMART
ORANGE
AVIGNON
ARLES
TARASCON
NISMES
MONTPELLIER
BEZIERS
NARBONNE
PERPIGNAN
CARCASSONNE
TOULOUSE
MONTAUBAN
CAHORS
AGEN
BORDEAUX
LIBOURNE
PERIGUEUX
BRIVE
TULLE
LIMOGES
ANGOULEME
POITIERS
CHATELLERAULT
TOURS
BLOIS
ORLEANS
GIEN
AUXERRE
SENS
TROYES
DIJON
BESANCON
DOLE
POLIGNY
ARBOIS
LONS LE SAUNIER
BOURG
CHATILLON
NANTUA
THONON
ST CLAUDE
MORZINE
SALLANCHES
CHAMONIX
MARTIGNY
SION
SIERRE
LEUK
VISP
BRIG
DOMODOSSOLA
ARONA
NOVARA
VERCELLI
IVREA
CHIVASSO
TURIN
SUSA
PINEROLO
SALUZZO
CUNEO
MONDOVI
CEVA
ALBA
ASTI
ALESSANDRIA
TORTONA
VOGHERA
PAVIA
MILAN
LODI
CREMONA
PIACENZA
PARMA
REGGIO
MODENA
BOLOGNA
FERRARA
RAVENNA
FORLI
CESENA
RIMINI
PESARO
ANCONA
SINIGAGLIA
FANO
URBINO
CAGLI
GUBBIO
PERUGIA
ASSISI
FOLIGNO
SPOLETO
TERNI
NARNI
ORVIETO
VITERBO
CIVITA CASTELLANA
CIVITA VECCHIA
ROME
TIVOLI
ALBANO
VELLETRI
FROSINONE
ANAGNI
ALATRI
SORA
ARPINO
SULMONA
AQUILA
TERAMO
ASCOLI
FERMO
MACERATA
TOLENTINO
CAMERINO
SARNANO
AMANDOLA
MONTEFORTINO
MONTALTO
ASCOLI
PORTO D'ASCOLI
GIULIANOVA
ATRI
PESCARA
CHIETI
LANCIANO
VASTO
CAMPOBASSO
ISERNIA
VENAFRO
CAPUA
CASERTA
NAPLES
PORTICI
TORRE DEL GRECO
CASTELLAMMARE
SORRENTO
AMALFI
SALERNO
VALLO
POLICASTRO
SAPRI
PAOLA
COSENZA
CASTROVILLARI
ROSSANO
CROTONE
CATANZARO
NICASTRO
MONTEALTO
REGGIO
GERACE
STILO
CATANZARO
TROPEA
PIZZO
MONTELEONE
NICOTERA
PALMI
GIOIA
ROCCELLA
SQUILLACE
SOVERATO
STILO
BOVA
GERACE
CAULONIA
CASTELVETERE
GIOIOSA
ROCCELLA

THE VALLEY OF ZERMAT
AND THE
CENTRAL PENNINE ALPS.
Matterhorn
Dent Blanche
Nadelhorn
Dom
Täschhorn
Rimpfischhorn
Strahlhorn
Monte Rosa
Lyskamm
Weisshorn
Mont Cervin

THE VALPELLINE, THE VALTOURNANCHE
AND THE
CENTRAL PENNINE ALPS.

GEOLOGICAL SECTION OF THE MATTERHORN. (MONT CERVIN)

BY SIGNOR F. GIORDANO.



THE MATTERHORN AND ITS GLACIERS.

EN. WEYMPER DEL. SC. ET IMP.

ENGLISH MILES

0 1 2

0 1 2 3 4

FRENCH KILOMÈTRES

AUTHOR'S ROUTES ——— FRONTIER + + + + +

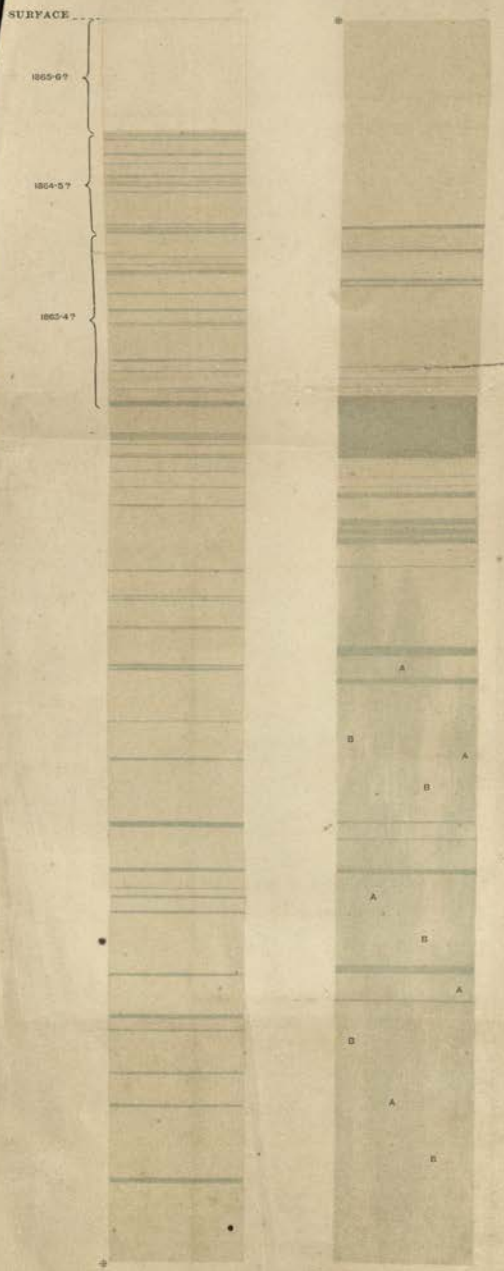
THE HEIGHTS ARE EXPRESSED IN ENGLISH FEET.

THE CHAIN OF MONT BLANC.
VAL DU GLACIER
VAL DE CHAMOUNIX
VAL FERRET (SUISSE)

VERTICAL SECTION OF THE SNOW

ON THE SUMMIT OF THE COL DE VALPELLINE, AUG. 1866.

SCALE ONE INCH TO A FOOT



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